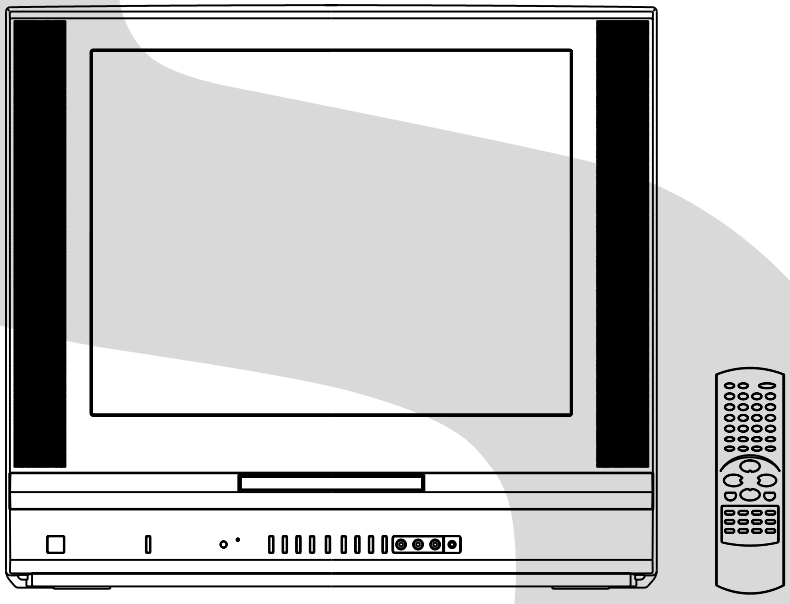
TOSHIBA

FILE NO. 140-200216

SERVICE MANUAL

COLOR TELEVISION/ DVD VIDEO PLAYER

MD20FM1



CAUTION

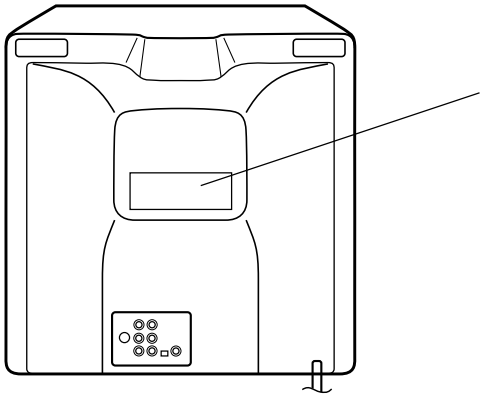
THIS DIGITAL VIDEO PLAYER EMPLOYS A LASER SYSTEM.

TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS SERVICE MANUAL CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

USE OF CONTROLS, ADJUSTMENTS OR THE PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE. VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

Location of the required Marking
The rating sheet and the safety caution are on the rear of the unit.



SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT SAFEGUARDS

1. READ INSTR UCTIONS
All the safety and operating instructions should be read before the unit is operated.

2. RETAIN INSTR UCTIONS
The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS
All warnings on the unit and in the operating instructions should be adhered to.

4. FOLLO W INSTR UCTIONS
All operating and use instructions should be followed.

5. CLEANING
Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. ATT ACHMENTS
Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.

7. WATER AND MOISTURE
Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

8. ACCESSORIES
Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. VENTILA TION
Slots and openings in the cabinet and in the back or bottom are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. POWER SOURCES
This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11. GROUNDING OR POLARIZA TION
This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. If your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, this plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

12. POWER-CORD PR OTECTION
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. LIGHTNING
To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

14. POWER LINES
An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

15. OVERLO ADING
Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.

16. OBJECT AND LIQ UID ENTR Y
Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

17. OUTDOOR ANTENNA GR OUNDING
If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

18. SERVICING
Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

IMPORTANT SAFEGUARDS (CONTINUED)

19. DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power-supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the unit.
c. If the unit has been exposed to rain or water.
d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
e. If the unit has been dropped or the cabinet has been damaged.
f. When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original parts.
Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

22. WALL OR CEILING MOUNTING

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

23. HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

24. DISC TRAY

Keep your fingers well clear of the disc tray as it is closing. It may cause serious personal injury.

25. CONNECTING

When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause an electric shock and serious personal injury. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

26. SOUND VOLUME

Reduce the volume to the minimum level before you turn on the product. Otherwise, sudden high volume sound may cause hearing or speaker damage.

27. SOUND DISTORTION

Do not allow the product output distorted sound for a longtime. It may cause speaker overheating and fire.

28. HEADPHONES

When you use the headphones, keep the volume at a moderate level. If you use the headphones continuously with high volume sound, it may cause hearing damage.

29. LEASER BEAM

Do not look into the opening of the disc tray or ventilation opening of the product to see the source of the laser beam. It may cause sight damage.

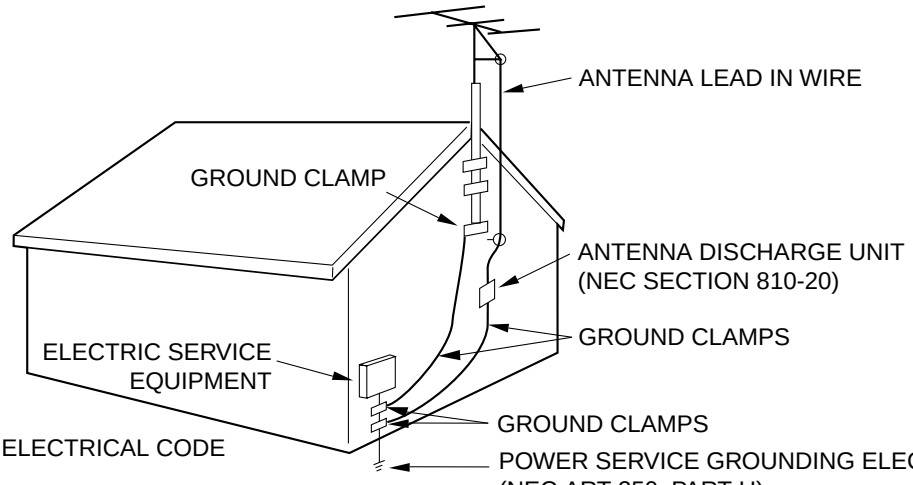
30. DISC

Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

31. NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE



NEC-NATIONAL ELECTRICAL CODE

S2898A

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and TV/DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the white gear of Deck CD section in the direction of the arrow by hand, remove the disc from Deck CD. **(Refer to Fig. 1)**

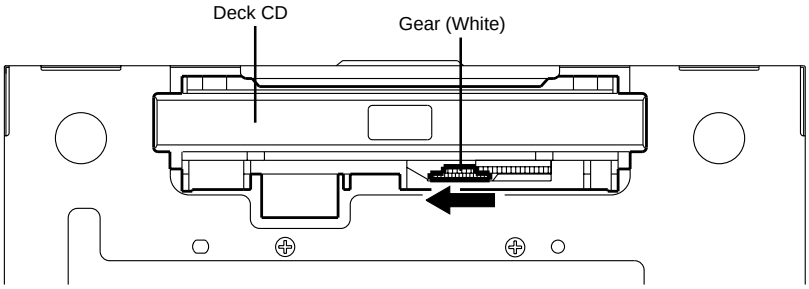


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Confirm that no disc on the disc tray.
3. Press and hold the '7' key on the remote control unit.
4. Simultaneously press and hold the 'STOP' key on the front panel.
5. Hold both keys for more than 3 seconds.
6. The On Screen Display message 'Initialize' will appear.
7. The 4 digit password has now been cleared.

NB: The above procedure will reset ALL of the player's settings to the default factory state.

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GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	20 Inch / 508.0 mmV
			CRT Type	FLAT
			Deflection	90 degree
			Magnetic Field BV/BH	+0.45G/0.18G
		Color System		NTSC
		Speaker		2 Speaker
			Position	Front
			Size	3 Inch
			Impedance	8 Ohm
		Sound Output	Max	2.5x2.5 W
			10%(Typical)	2.0x2.0 W
G-2	**DVD System**	Color System		NTSC
		Disc		DVD Video,CD-DA,CD-R (CD-DA) CD-RW(CD-DA)
		Disc Diameter		120 mm , 80 mm
		Deck	Disc Loading System	Front Loading
			Motor	3 Motors
		Pick up		1-Lens 2-Beams System
		Playback time(Max) DVD 1-L	DVD 1-Layer	135min (4.7GB)
			DVD 2-Layer	245min (8.5GB)
			CD	74min
			VIDEO CD	--min
		Search speed		Fwd 2-20 times
			Actual	2-45 times
				Rev 2-20 times
			Actual	2-45 times
		Slow speed		Fwd 1/7-1/2 times
			Actual	--
				Rev 1/7 -1/2 times
			Actual	1-2 times
G-3	**Tuning System**	Broadcasting System		US System M
		Tuner and Receive CH	System	1Tuner
			Channel Tuner	Others
			Tuning System	F-Synth
			Input Impedance	VHF/UHF 75 Ohm
			CH Coverage	2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Frequency	Picture(FP)	45.75MHz
			Sound(FS)	41.25MHz
			FP-FS	4.50MHz
		Preset CH		--
		Stereo/Dual TV Sound		Yes
		NTSC Playback (PAL60)		No
G-4	**Power**	Power Source	AC	120V, 60Hz
			DC	--
		Power Consumption	at AC	120W at 120V 60Hz
			at DC	--
			Stand by (at AC)	8 W at 120V 60Hz
			Per Year	-- kWh/Year
		Power Supply Cord		UL
		Protector	Power Fuse	Yes
G-5	**Signal**	Video Signal	Input Level	1 V p-p/75 ohm
			Output Level	1 V p-p/75 ohm
			S/N Ratio (Weighted)	65dB
			Horizontal Resolution at DVD Mode	400 Lines (TV Monitor)
				500 Lines (Video Out)
		RGB Signal	Output Level	-- V p-p/75 ohm
		Audio Signal	Input Level	RCA -8.0dB/50Kohm
			Output Level	RCA -8.0dB/1Kohm
			S/N Ratio at DVD (Weighted)	90 dB
			Harmonic Distortion	0.01% (1KHz)
			Frequency Response : at DVD	4Hz - 22KHz
			at VIDEO CD	--
			at CD	4Hz - 20KHz
		Digital Audio Signal	Output Level	0.5 V p-p/75 ohm

GENERAL SPECIFICATIONS

G-6	**Interface**	Switch	Front	Power (Tact)	Yes
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
				Play	Yes
				Open/Close	Yes
				Skip(>>)	Yes
				Skip(<<)	Yes
				Still/Pause	No
				Stop	Yes
				Main Power SW	No
			Rear	AC/DC	No
				Color On/Off (SECAM Only)	No
				Degauss	No
				Main Power SW	No
		Indicator		Power	Red
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input	Yes
				Audio Input	Yes (Stereo)
				Other Terminal	Head Phone
			Rear	Video Input(Rear1)	Yes
				Video Input(Rear2)	No
				Audio Input(Rear1)	Yes (Stereo)
				Audio Input(Rear2)	No
				Video Output	Yes
				Audio Output	Yes (Stereo)
				Euro Scart	No
				Digital Audio Output	Coaxial
				Optical Audio Output	No
				Color Stream	No
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	F Type
				AC Outlet	No
G-7	**Set Size**			Approx. W x D x H (mm)	574x483x514.5
G-8	**Weight**			Net (Approx.)	25.5kg
				Gross (Approx.)	29.0kg
G-9	**Regulation**			Safety	UL
				Radiation	FCC
				X-Radiation	DHHS
G-10	**Temperature**			Operation	5oC ~ 40oC
				Storage	-20oC ~ 60oC
G-11	**Operating Humidity**				Less than 80% RH
G-12	**On Screen Display**	Menu(TV)			Yes
			Menu Type		Icon
			Picture		Yes
				Contrast	Yes
				Brightness	Yes
				Color	Yes
				Tint	Yes
				Sharpness	Yes
			Sound		Yes
				Bass	Yes
				Treble	Yes
				Balance	Yes
			CH		Yes
				Auto CH Memory	Yes
				ADD/DELETE	Yes
				TV/CATV	Yes
			Option		Yes
				Language	Yes
				V-Chip	Yes
		Clock			No
		Clock Set			No
		On/Off Timer			No
		Sleep Timer			Yes
		CH/AV/DVD			Yes
		Stereo, Audio Output, Bilingual			No
		Stereo, Mono, SAP(Stereo Only)			Yes
		Stereo, Audio Output			No
		Sound 1/2			No
		SAP (Stereo Only)			Yes
		NICAM Auto Off			No
		Closed Caption			Yes
		System Select			No
		Area Code			No
		Pin Code Registration			No
		Pin Code			No
		DVD RGB /Composite			No
		Game			Yes
		Hotel Lock			No
		Volume			Yes
		Sound Mute			No

GENERAL SPECIFICATIONS

	On Screen Display	Menu(DVD)		Yes
			Menu Type	Character
			Rating Level	Yes
			Audio	Yes
			Sub Title	Yes
			TV Screen Size	Yes
			OSD Display On/Off	Yes
			Menu Language	Yes
			Audio Output	No
			Set Up Language	Yes
			Password Lock/Unlock	Yes
		Open		Yes
		Close		Yes
		No disc		Yes
		Reading		Yes
		Play		Yes
		Still/Pause		Yes
		Stop		Yes
		Prohibit Mark		Yes
		Step		Yes
		Next		Yes
		Back		Yes
		Random		Yes(CD Only)
		Repeat		Yes
		Slow+ ##		Yes
		Slow- ##		Yes
		Search+ ##		Yes
		Search- ##		Yes
		Jump		Yes
		Resume		Yes
		Title No.		Yes
		Chapter No.		Yes
		Track No.		Yes
		Time		Yes
		Sub Title No.		Yes
		Angle No.		Yes
		Vocal On/Off		Yes
		Audio No.		Yes
		Audio Stereo L/R		No
		Zoom		Yes
		Marker No.		No
		Program Play Back		Yes(CD Only)
G-13	**OSD Language**	(TV)		Eng, Fre, Spa
		(DVD)		Eng, Fre, Spa

GENERAL SPECIFICATIONS

G-14	**Remote Control**	Unit		RC-EF
		Glow in Dark Remocon		Yes
		Format		NEC
		Custom Code		71-8E h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Keys	Total	45 Key
			Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Open/Close	No
			Play	Yes
			Stop	Yes
			Search+	Yes
			Search-	Yes
			Skip+	Yes
			Skip-	Yes
			Slow+	Yes
			Slow-	Yes
			Still/Pause	Yes
			Display/Call	Yes
			TV/DVD	Yes
			Clear/Reset	Yes
			Audio/Audio Sel.	Yes
			Angle	Yes
			Subtitle	Yes
			Subtitle On/Off	No
			Title	Yes
			Set up/TV Menu <TV MENU>	Yes
			Return	Yes
			Menu DVD <SET UP>	Yes
			Up/ Set+/ CH Up	Yes
			Down/ Set-/ CH Down	Yes
			Left/Select-	Yes
			Right/Select+	Yes
			Select/Enter	Yes
			Play Mode	Yes
			Closed Caption	Yes
			Input	Yes
			Volume+	Yes
			Volume-	Yes
			Repeat A-B	Yes
			Zoom/ Quick View	Yes
			Mute	No
			Sleep	Yes
			Jump	Yes
			Text/Mix/TV	No
			Game	Yes

GENERAL SPECIFICATIONS

G-15	Features	Auto Degauss		Yes
		Auto Shut Off		Yes
		Auto Power On, Auto Play		No
		Canal+		No
		CATV		Yes
		Anti-theft		No
		Rental		No
		Memory(Last CH)		Yes
		Memory(Last Volume)		Yes
		V-Chip		Yes
			Type	--
		BBE		No
		Fast Text		No
		UniText		No
		Top Text		No
		Auto Search		No
		CH Allocation		No
		SAP		Yes
		Channel Lock		No
		Just Clock Function		No
		Game Position		Yes
		CH Label		No
		VM Circuit		No
		Area Code		No
		FM Transmitter		No
		Energy Star		No
		TV Monitor		No
		Closed Caption		Yes
		Full OSD		Yes
		Premiere		No
		Comb Filter		Yes
				2 Lines
		Parental Lock (DVD Only)		Yes
		Auto CH Memory		Yes
		Hotel Lock		No
		Stable Sound		No
		Favorite CH		No
		Digital Out	(Dolby Digital)	Yes
			(PCM)	Yes
			(DTS)	Yes
		Down Mix Out	(Dolby Digital)	Yes
		Self Diagnostic		No
		MP3 Playback		No
G-16	Accessories	Owner's Manual	Language	Eng
			w/Guarantee Card	Yes
		Guarantee Card		No
		Registration Card(NDL Card)		No
		Registration Card		Yes
		Warranty Card		No
		Information Sheet		No
		ESP Card		No
		Toll Free Insert Sheet		No
		Warning Sheet		No
		Survice Information Sheet		No
		Quick Set-up Sheet		No
		Euro Warranty Information Sheet		No
		Dew/AHC Caution Sheet		No
		PTB Sheet		No
		Circuit Diagram		No
		Service Facility List		No
		Service Station List		No
		Inportant Safeguard		No
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	No
			Terminal	--
		Loop Antenna		No
			Terminal	--
		75 Ohm Coaxial Cable		No
				--
		21pin Cable		No
		U/V Mixer		No
		Channel Film		No
		Battery		Yes
			UM size x pcs	UM-4 x 2 pcs
			OEM Brand	No
		DC Car Cord (Center+)		No
		AC Cord		No
		AV Cord (2Pin-1Pin)		No
		AC Plug Adaptor		No
		Safety Tip		No
		Anntena Change Plug		No
		300 ohm to 75 ohm Antenna Adapter		Yes

GENERAL SPECIFICATIONS

G-17	**Carton**	Master Carton		No
			Content	--- Sets
			Material	--- / ---
			Dimensions W x D x H(mm)	---
			Description of Origin	---
		Gift Box		Yes
			Material	Double/White
			W/Color Phote Label	No
			Dimensions W x D x H(mm)	647x620x625
			Design	As Per Buyer 's
			Description of Origin	Yes
		Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	31
		Container Stuffing		171 Sets/40' container
G-18	**Cabinet Material**		Cabinet Front	PS, 94V0
			Cabinet Rear	PS, 94V0

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 6 screws ①.
2. Remove the 2 screws ② which are used for holding the Back Cabinet.
3. Remove the AC cord from the AC cord hook ③.
4. Remove the Back Cabinet in the direction of arrow.

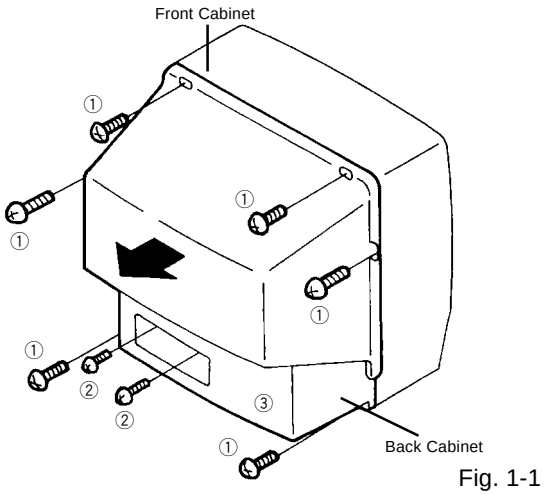


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors:
   (CP801 and CP850B).
3. Remove the CRT PCB in the direction of arrow.

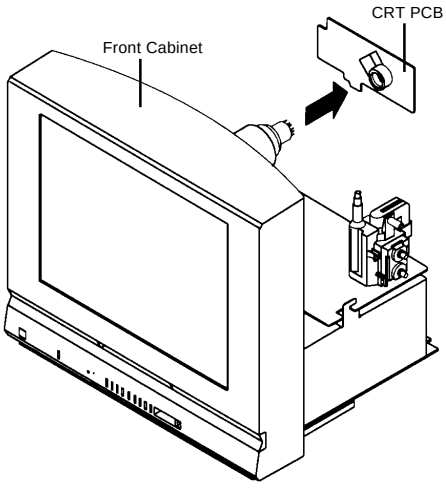


Fig. 1-2

1-3: TV/DVD BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors:
   (CP102, CP303, CP401 and CP502).
3. Remove the TV/DVD Block in the direction of arrow.

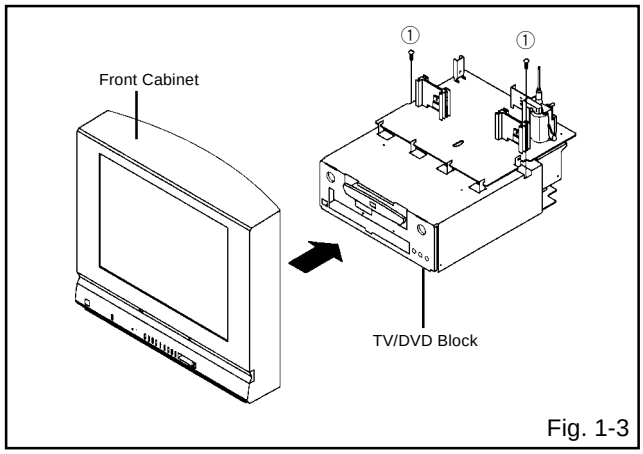


Fig. 1-3

1-4: MAIN PCB (Refer to Fig. 1-4)

1. Remove the 2 screws ①.
2. Remove the 3 screws ②.
3. Disconnect the following connectors:
   (CP403, CP810B, CP820B and CP811).
4. Remove the Main PCB in the direction of arrow.

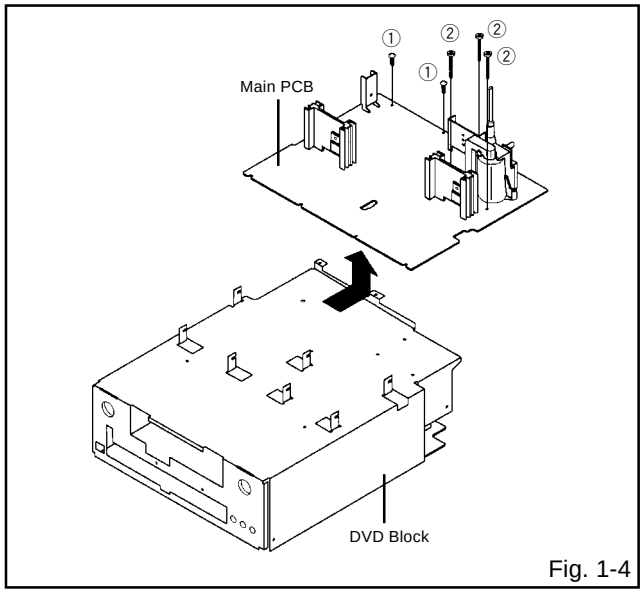


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: FRONT TRAY PLATE/TOP SHIELD
(Refer to Fig. 1-5)

1. Remove the Front Tray Plate in the direction of arrow (A).
2. Remove the 9 screws ①.
3. Remove the Top Shield in the direction of arrow (B).

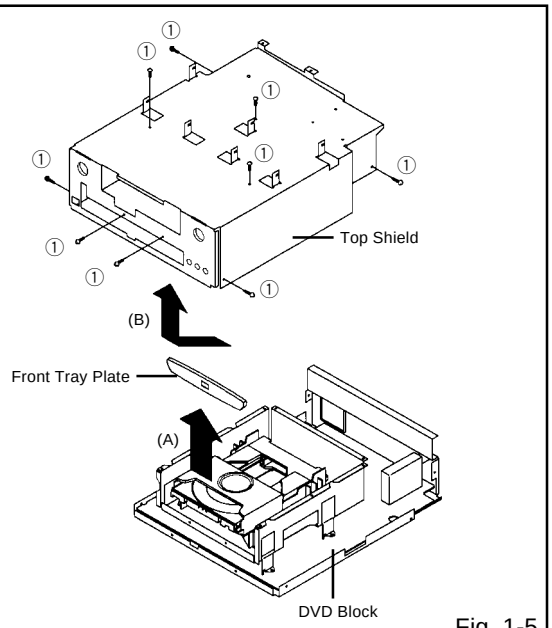


Fig. 1-5

1-6: AV PCB/SYSCON PCB/CD DECK (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Remove the AV PCB in the direction of arrow (A).
3. Remove the 4 screws ②.
4. Remove the Angle Deck in the direction of arrow (B).
5. Disconnect the following connectors:
   (CP4001 and CP4002).
6. Remove the 4 screws ③.
7. Remove the CD Deck in the direction of arrow (C).
8. Remove the 4 screws ④.
9. Remove the Syscon PCB in the direction of arrow (D).

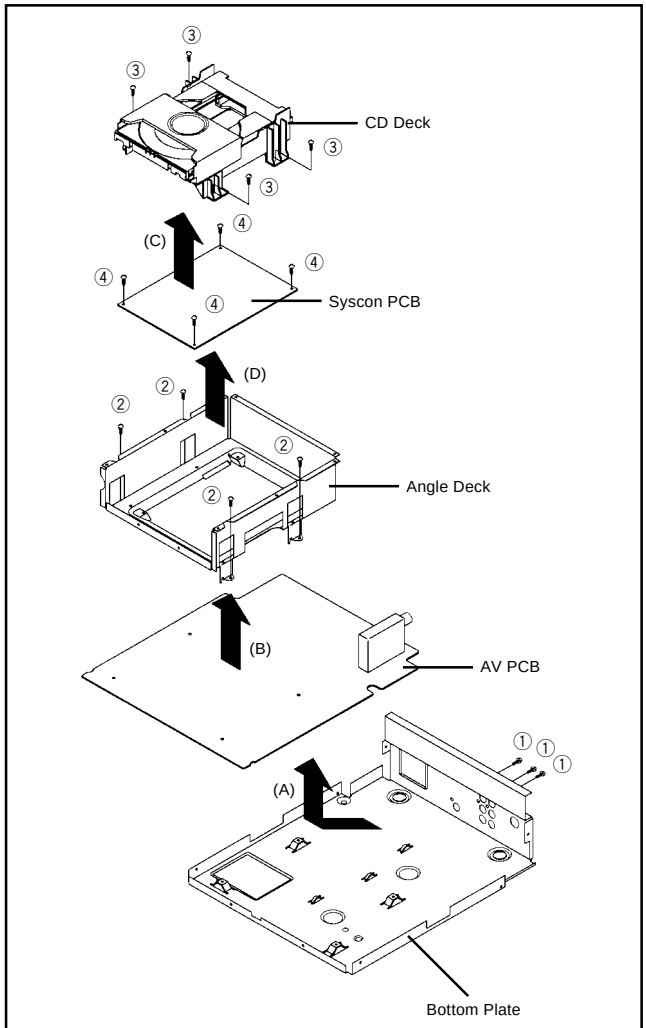


Fig. 1-6

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 2-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

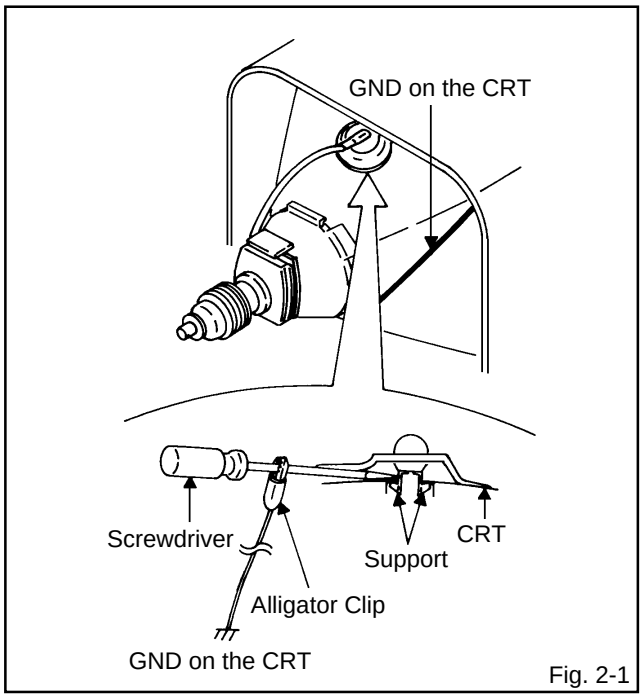


Fig. 2-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 2-2.)**

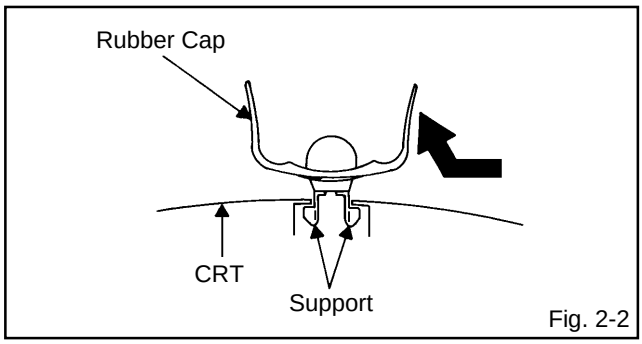


Fig. 2-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 2-3.)**

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

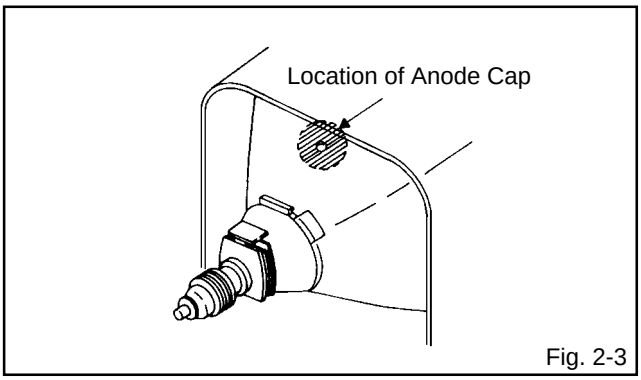


Fig. 2-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 2-4.)**

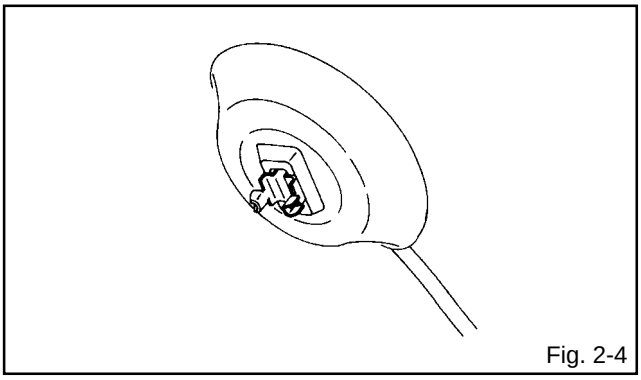


Fig. 2-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 2-5**.

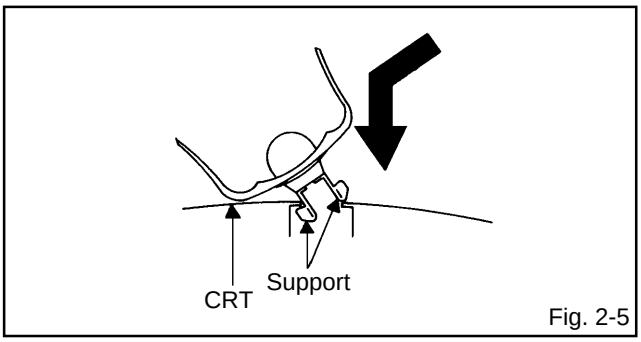


Fig. 2-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 3-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

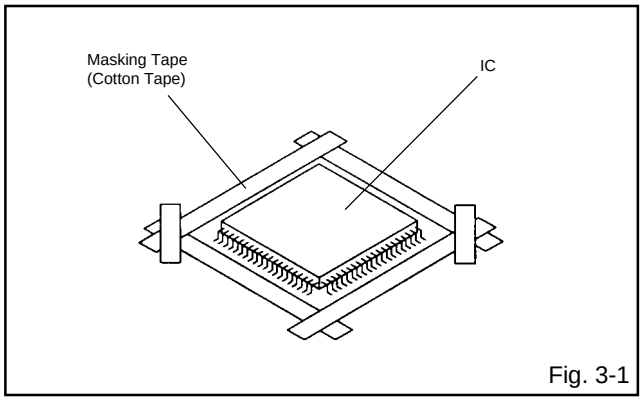


Fig. 3-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 3-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

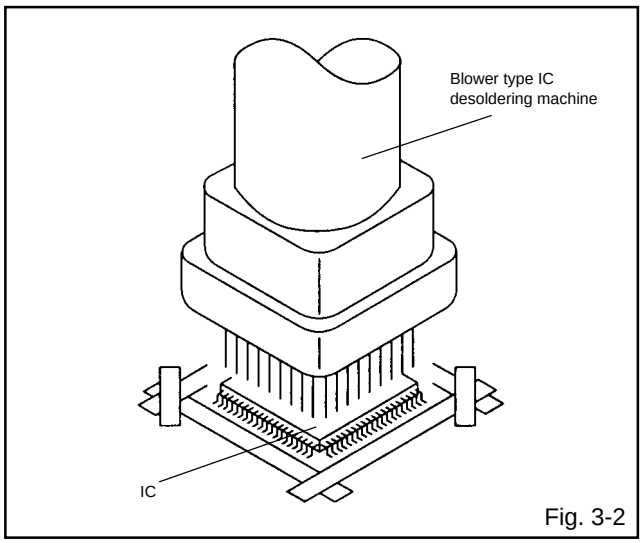


Fig. 3-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 3-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

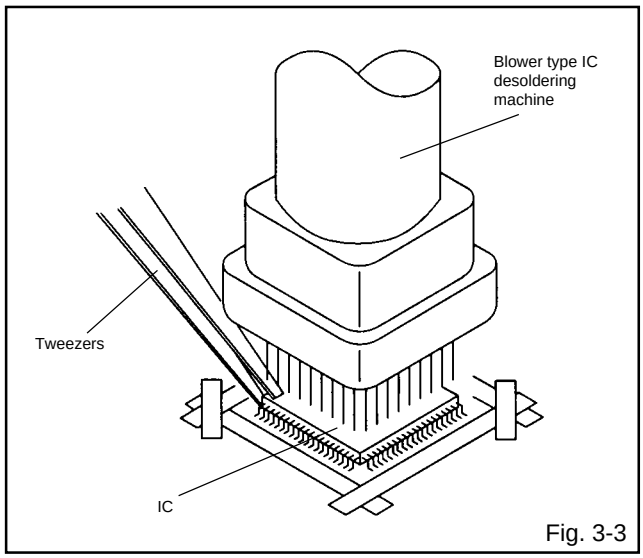


Fig. 3-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 3-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

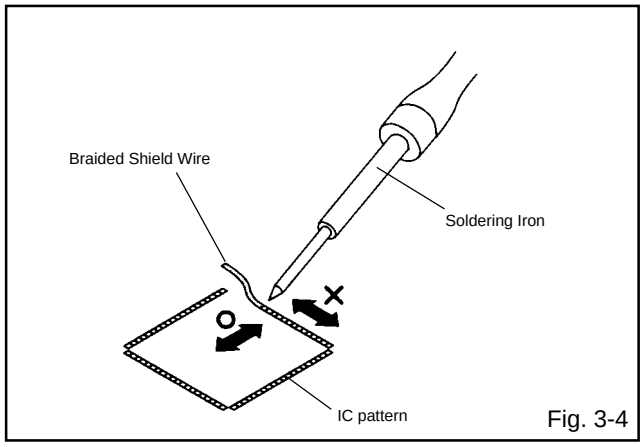


Fig. 3-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**

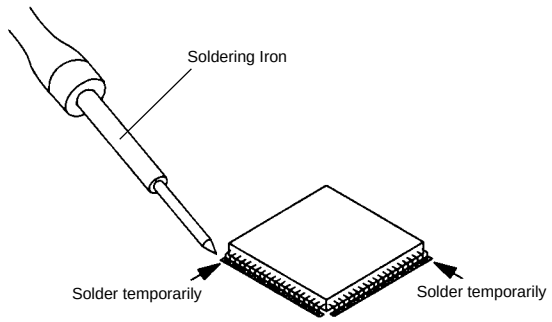


Fig. 3-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**

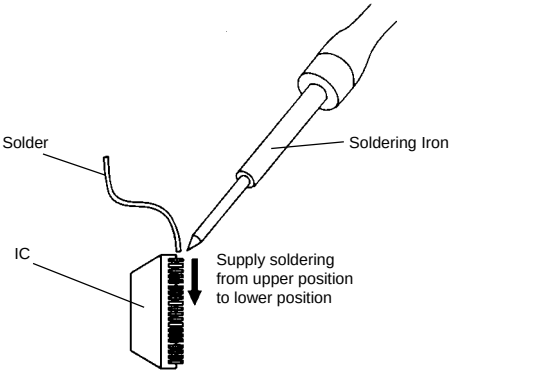


Fig. 3-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

   NOTE

   Do not absorb the solder to excess.

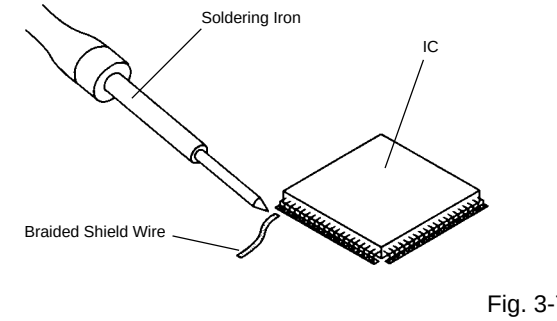


Fig. 3-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**

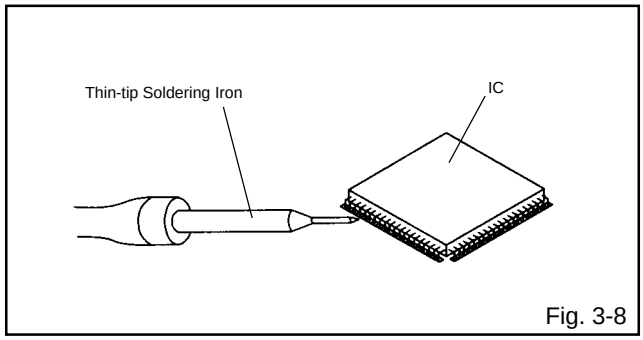


Fig. 3-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a standard time (second).

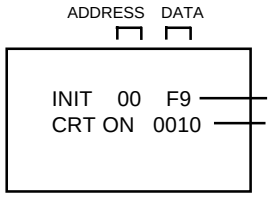
Set Key	Remocon Key	Standard Time (seconds)	Operations
VOL. (-) MIN	0	1	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	1	Initialization of the factory on TV. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	3	1	Initialization of the factory on DVD. NOTE: Do not use this for the normal servicing. The function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously.
VOL. (-) MIN	6	1	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	1	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	1	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
STOP	7	3	Releasing of PARENTAL LOCK. Refer to the “PARENTAL CONTROL - RATING LEVEL”. NOTE: The function will only work without the setting of DVD disc at DVD mode.

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.



Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

Note: No need setting for the position of the mark @ due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	F9	43	25	01	F1	23	27	F7	81	CD	D9	3F	3F	40	61	63
10	64	26	67	69	2A	6B	6C	6D	6E	6F	70	71	52	72	53	73
20	54	74	55	75	75	56	56	76	76	57	57	77	77	58	58	78
30	78	59	59	79	79	5A	5A	7A	7A	5B	5B	7B	7B	5C	5C	7C
40	7C	5D	5D	7D	7D	5E	5E	7E	7E	5F	5F	5F	7F	7F	@	@
50	@	@	@	@	@	@	@	@	@	@	@	@	@	@	@	@
60	@	@	@	@	@	@	@	@	@	@	@	10	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.

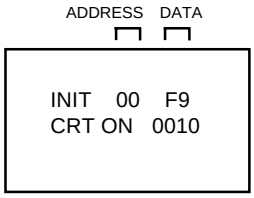


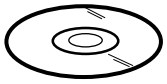
FIG. 1

3. ADDRESS is now selected and should "blink". Using the VOL. UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. UP/DOWN button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

JG175A DVD Test Disc
(A-BEX TDV-540)



Ref. No.	Part No.	Parts Name	Remarks
JG175A	APJG175A00	DVD Test Disc (A-BEX TDV-540)	Tint adjustment of DVD mode

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. AC Voltmeter
4. Pattern Generator
5. Multi-Sound Signal Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

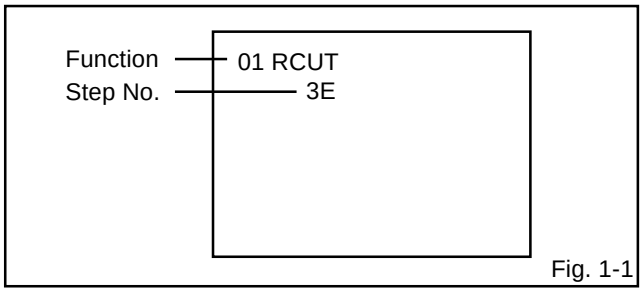


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(1-0)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
01	R CUT OFF	37	BRI. AV(CENT.)
02	G CUT OFF	38	BRI. AV(MAX)
03	B CUT OFF	39	BRI. AV(MIN)
04	G DRIVE	40	COL. AV(CENT.)
05	B DRIVE	41	COL. AV(MAX)
06	BRIGHTNESS(CENT.)	42	COL. AV(MIN)
07	BRIGHTNESS(MAX)	43	TINT AV
08	BRIGHTNESS(MIN)	44	SUB CONTRAST AV
09	COLOR(CENT.)	45	CONT. AV(CENT.)
10	COLOR(MAX)	46	CONT. AV(MAX)
11	COLOR(MIN)	47	CONT. AV(MIN)
12	TINT	48	SHARPNESS AV
13	SUB CONTRAST	49	BRI. DVD(CENT.)
14	CONTRAST(CENT.)	50	BRI. DVD(MAX)
15	CONTRAST(MAX)	51	BRI. DVD(MIN)
16	CONTRAST(MIN)	52	COL. DVD(CENT.)
17	SHARPNESS	53	COL. DVD(MAX)
18	RGB CONTRAST	54	COL. DVD(MIN)
19	H POSITION	55	TINT DVD
20	V POSITION	56	SUB CONTRAST DVD
21	V SIZE	57	CONT. DVD(CENT.)
22	V LINEARITY	58	CONT. DVD(MAX)
23	V S CORRECTION	59	CONT. DVD(MIN)
24	EW PARABOLA CORR.	60	SHARPNESS DVD
25	EW TRAPEZIUM CORR.	61	BRI. GAME(CENT.)
26	H SIZE	62	BRI. GAME(MAX)
27	V EHT	63	BRI. GAME(MIN)
28	H EHT	64	CONT. GAME(CENT.)
29	RF AGC	65	CONT. GAME(MAX)
30	V CENTERING	66	CONT. GAME(MIN)
31	CORNER CORR. TOP	67	TUNING V MUTE
32	CORNER CORR. BTM	68	POWER ON V MUTE
33	OSD H	69	INPUT LEVEL
34	FM LEVEL	70	SEPARATION L
35	TEST PWM	71	SEPARATION H
36	TEST TONE CONTROL	72	CUT OFF

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the digital voltmeter to **TP401**.
4. Adjust the **VR502** until the digital voltmeter is 111 ± 0.5V.

2-2: RF AGC

1. Receive the VHF HIGH (63dB).
2. Place the set with Aging Test for more than 15 minutes.
3. Connect the digital voltmeter between the **pin 5 of CP101** and the **pin 1 of CP101**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(29)** on the remote control to select "AGC".
5. Press the RIGHT/LEFT button on the remote control until the digital voltmeter is 2.7 ± 0.05V.

2-3: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-4: CUT OFF

1. Adjust the unit to the following settings.
   R CUT=7F, G CUT=7F, B CUT=7F, G DRV=3F, B DRV=3F
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(72)** on the remote control to select "CUT OFF".
6. Adjust the **Screen Volume** until a dim raster is obtained.

ELECTRICAL ADJUSTMENTS

2-5: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "G DRV".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT", "G CUT", "B CUT", "G DRV" or "B DRV".
6. Adjust the RIGHT/LEFT button on the remote control to whiten the R CUT, G CUT, B CUT, G DRV, and B DRV at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-6: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(19)** on the remote control to select "HPOSI".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-7: HORIZONTAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(26)** on the remote control to select "WIDS".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes 10 ± 2%.

2-8: VERTICAL SHIFT

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "VPOSI".
4. Press the RIGHT/LEFT button on the remote control until the horizontal line becomes fit to the notch of the shadow mask.

2-9: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(21)** on the remote control to select "VSIZE".
4. Press the RIGHT/LEFT button on the remote control until the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.

2-10: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-9. After the adjustment of Vertical Linearity, reconfirm the Vertical Shift and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "VLIN".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-11: PARABOLA CORR

1. Receive the rainbow pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select "DPCS".
4. Press the RIGHT/LEFT button on the remote control until the right and left vertical lines are straight.

2-12: TRAPEZIUM

1. Receive the rainbow pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(25)** on the remote control to select "KEYS".
4. Press the RIGHT/LEFT button on the remote control until the both vertical lines of the screen become parallel.

2-13: CORNER CORR TOP

1. Receive the rainbow pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(31)** on the remote control to select "CNRT".
4. Press the RIGHT/LEFT button on the remote control until the upper section of the both ends vertical lines are straight.

2-14: CORNER CORR BOTTOM

1. Receive the rainbow pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(32)** on the remote control to select "CNRB".
4. Press the RIGHT/LEFT button on the remote control until the bottom section of the both ends vertical lines are straight.

ELECTRICAL ADJUSTMENTS

2-15: SEPARATION

Please do the method (1) or method (2) adjustment.

Method (1)

1. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(70)** on the remote control to select “SEPAL”.
5. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.

Method (2)

1. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(70)** on the remote control to select “SEPAL”.
5. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
8. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF signal.
9. Connect the oscilloscope to the **Audio Out Jack (L-ch)**. Then perform the above adjustments 3~7.

2-16: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(33)** on the remote control to select "OSD".
2. Press the RIGHT/LEFT button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

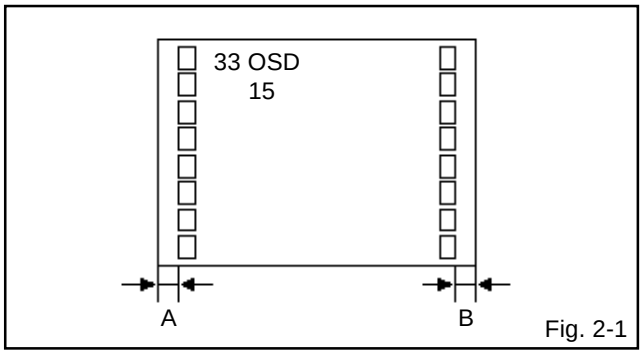


Fig. 2-1

2-17: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to **TP901**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(69)** on the remote control to select "LVL".
4. Press the RIGHT/LEFT button on the remote control until the AC voltmeter is 75 ± 2mV.

2-18: SUB BRIGHT CENTER

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "BRTC".
4. Press the RIGHT/LEFT button on the remote control until the white 15% is starting to be visible
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode.
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(37)** on the remote control to select "BRTCA".
9. Press the RIGHT/LEFT button on the remote control until the white 15% is starting to be visible
10. Press the TV/DVD button on the remote control to set to the DVD mode.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(49)** on the remote control to select "BRTCD".
12. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV.
13. Press the GAME button on the remote control to set to the GAME mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(61)** on the remote control to select "BRTCG".
15. Press the RIGHT/LEFT button on the remote control to decrease the step numbers by 16 steps to the AV.

ELECTRICAL ADJUSTMENTS

2-19: SUB TINT CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP803**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "TNTC".
5. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness, contrast, color and tint to normal position.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(43)** on the remote control to select "TNTCA".
10. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
11. Press the TV/DVD button on the remote control to set to the DVD mode.
12. Playback the Title2 (color bar pattern) of **JG175A**.
13. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(55)** on the remote control to select "TNTCD".
14. Press the RIGHT/LEFT button on the remote control until the section "B" becomes a straight line. **(Refer to Fig. 2-3)**

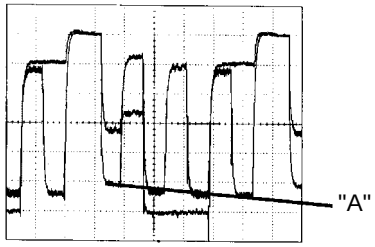


Fig. 2-2

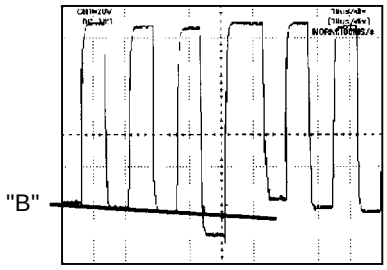


Fig. 2-3

2-20: SUB COLOR CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscop to **TP801**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "COLC".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 120 ± 5% of the white level. **(Refer to Fig. 2-4)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode.
9. Using the remote control, set the brightness, contrast, color and tint to normal position.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(40)** on the remote control to select "COLCA".
11. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
12. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 120 ± 5% of the white level. **(Refer to Fig. 2-4)**
13. Press the TV/DVD button on the remote control to set to the DVD mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(52)** on the remote control to select "COLCD".
15. Press the RIGHT/LEFT button on the remote control to increase the step numbers by 3 steps to the AV.

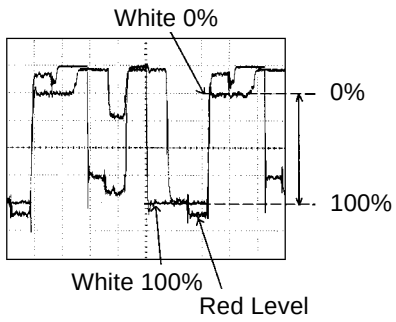


Fig. 2-4

ELECTRICAL ADJUSTMENTS

2-21: SUB CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "CNTX".
2. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "61"
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT SELECT button on the remote control to set to the AV mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(46)** on the remote control to select "CNTXA".
6. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "65"
7. Receive a broadcast and check if the picture is normal.
8. Press the TV/DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(58)** on the remote control to select "CNTXD".
10. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV mode.
11. Press the GAME button on the remote control to set to the GAME mode.
12. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(65)** on the remote control to select "CNTXG".
13. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV mode.

2-22: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	STEP NO.	NO.	FUNCTION	STEP NO.
07	BRIGHTNESS(MAX)	7F	42	COL. AV(MIN)	00
08	BRIGHTNESS(MIN)	00	44	SUB CONTRAST AV	07
10	COLOR(MAX)	7F	45	CONT. AV(CENT.)	3F
11	COLOR(MIN)	00	47	CONT. AV(MIN)	10
13	SUB CONTRAST	07	48	SHARPNESS AV	38
14	CONTRAST(CENT.)	3F	50	BRI. DVD(MAX)	7F
16	CONTRAST(MIN)	10	51	BRI. DVD(MIN)	00
17	SHARPNESS	38	53	COL. DVD(MAX)	7F
18	RGB CONTRAST	21	54	COL. DVD(MIN)	00
23	V S CORRECTION	0A	56	SUB CONTRAST DVD	07
27	V EHT	02	57	CONT. DVD(CENT.)	3F
28	H EHT	02	59	CONT. DVD(MIN)	10
30	V CENTERING	18	60	SHARPNESS DVD	2D
34	FM LEVEL	01	62	BRI. GAME(MAX)	7F
35	TEST PWM	00	63	BRI. GAME(MIN)	00
36	TEST TONE CONTROL	51	64	CONT. GAME(CENT.)	3F
38	BRI. AV(MAX)	7F	66	CONT. GAME(MIN)	10
39	BRI. AV(MIN)	00	67	TUNING V MUTE	08
41	COL. AV(MAX)	7F	68	POWER ON V MUTE	90

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

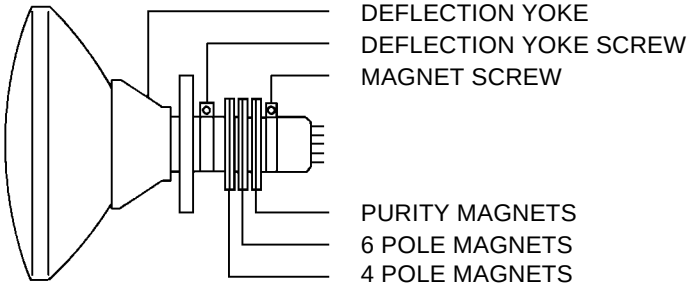


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

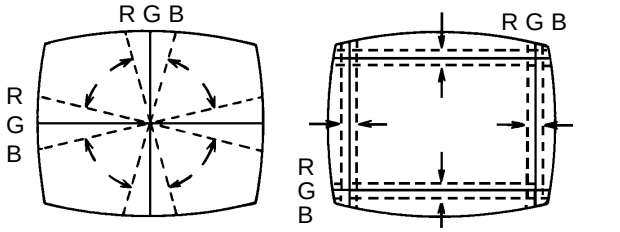
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

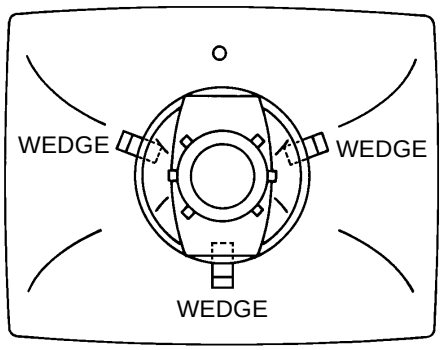
Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

Fig. 3-2-a

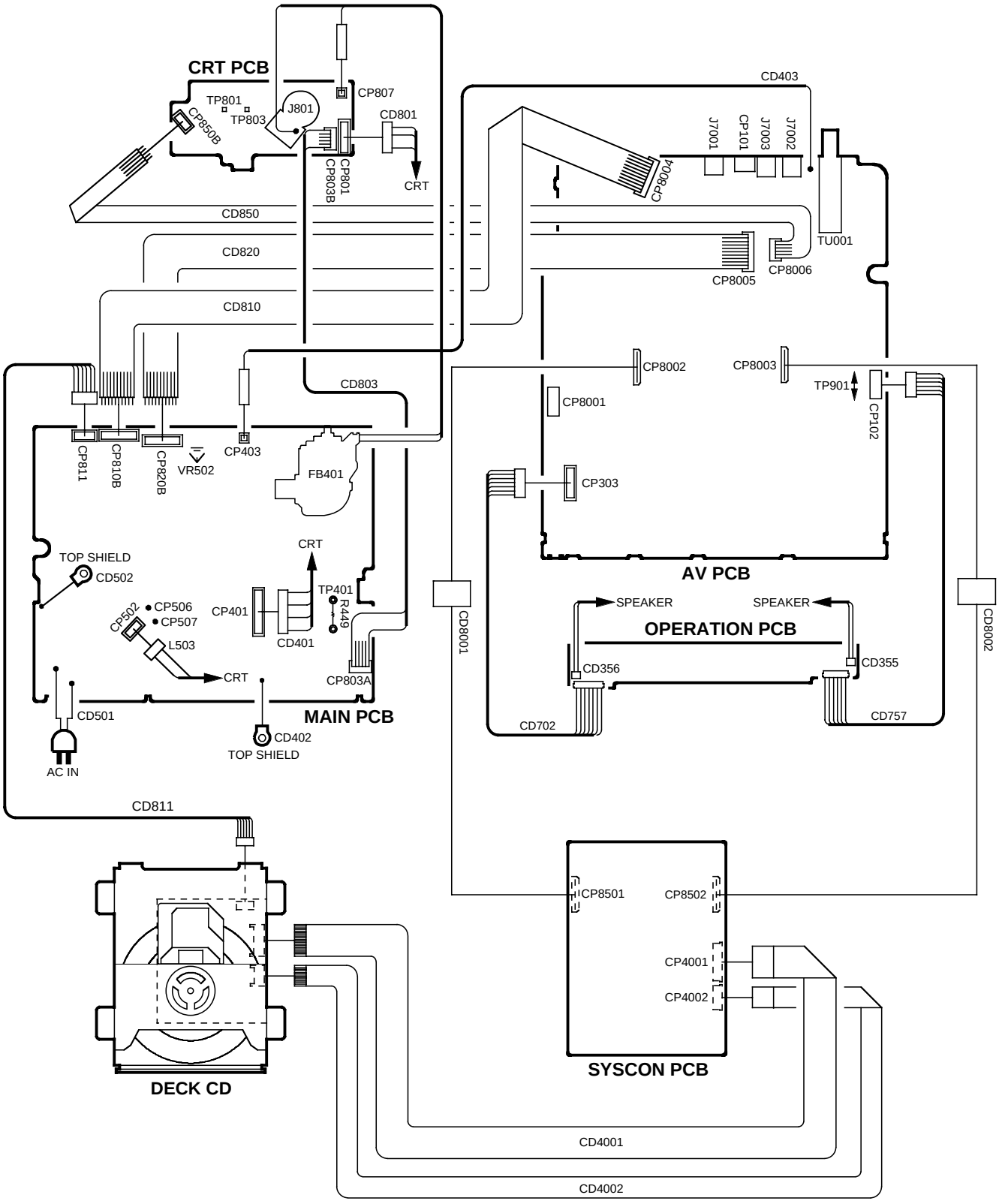


WEDGE POSITION

Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

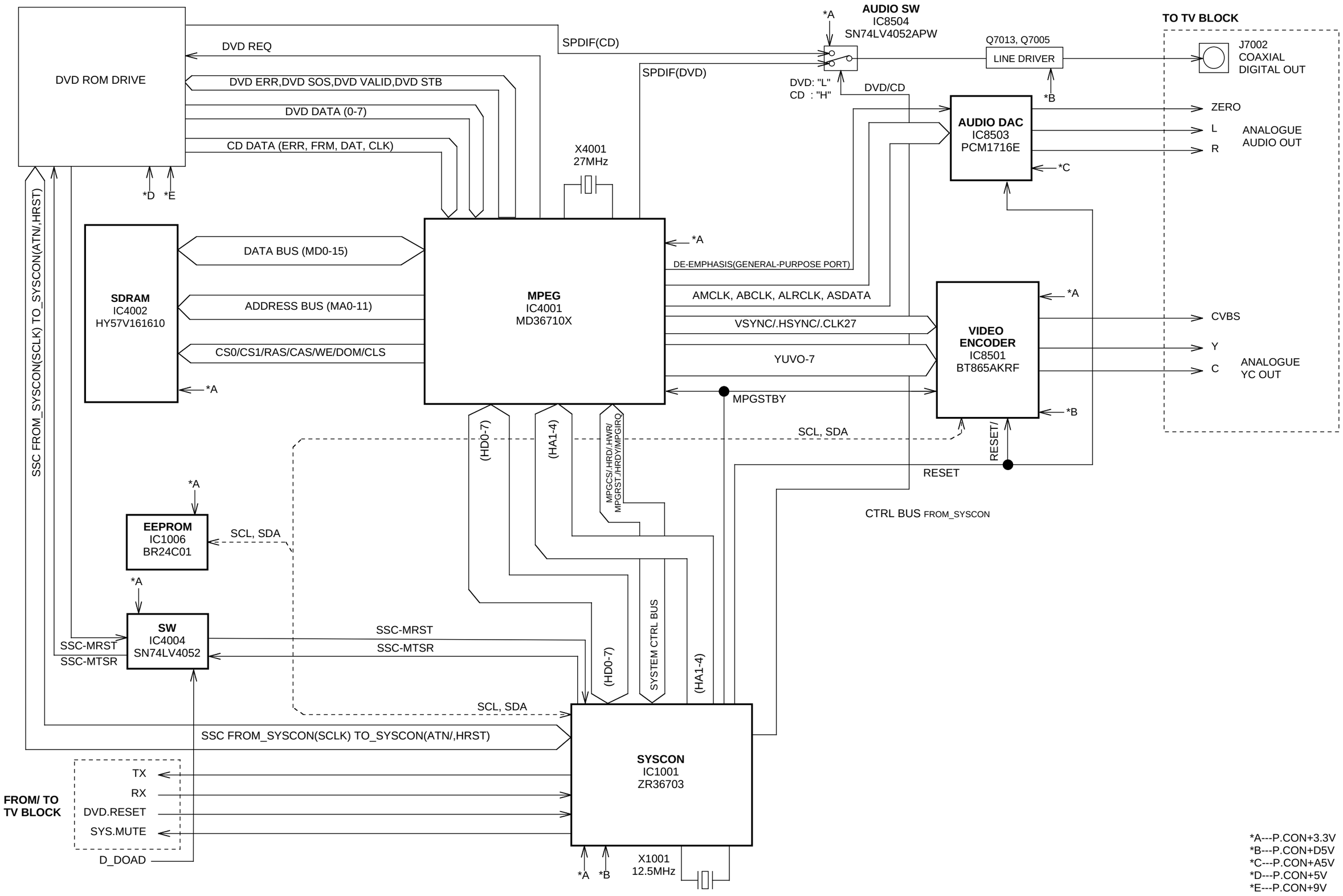


TV BLOCK DIAGRAM

FROM OPERATION BLOCK
CH DOWN
CH UP
VOL UP
VOL DOWN
POWER ON/OFF
OPEN/CLOSE
STOP
PLAY
SKIP FF
SKIP REW
RESET
IC102 PST600C
AT+5V
*A
MAIN
IC101
OEC6063A
X101
16MHz
TU001
SCL SDA AGC IF
Q103
H.BUFFER
Q105
BUFFER
Q205
PRE AMP
SAW FILTER
CF203
FROM DVD BLOCK
DVD C
DVD Y
DVD A L
DVD A R
ZERO
SYS MUTE
DVD_VIDEO
MIXER
IC7001
NJM4580M
Q7003
MUTE
Q7017
MUTE
Q7009, Q7010
Q7011, Q7012
MUTE SW
*G
*B
*C
Q204
BUFFER
Q202, Q203
BUFFER
SOUND
DECORDER
IC902
AN5829S
*D
AV SW
IC701
MM1311AD
VIDEO SW
IC602
LA7151M
R.OUT
G.OUT
B.OUT
Q109
BUFFER
V801
CRT
DY801
V.OUT
IC401
AN5522
FB401
FBT
Q405
H.DRIVE
Q406
H.OUT
Q751, Q752
BUFFER
Q754
BUFFER
Y
COMB FILTER
IC751
TC90A45P
*B *D
BUFFER
Q604
X601
3.579545MHz
CHROMA/IF
IC601 TB1253N
Q301
MUTE
BUFFER
Q8005
BUFFER
Q8004
Q7008
MUTE
Q7007
MUTE
R
L
AUDIO SW
IC7002
CD4053BNSR
*E *F
Q7006
BUFFER
Q7016
BUFFER
Q702
BUFFER
Q753
BUFFER
DEGITAL SOUND
CONTROL
IC301
M62420FP
*B *D
SOUND AMP
IC302
AN7522
SOUND+B
FROM/TO OPERATION BLOCK
SPEAKER
SP352
SPEAKER
SP351
HEADPHONE
J351
J701
V L R
FROM OPERATION BLOCK
J7002
V R L
J7003
V R L

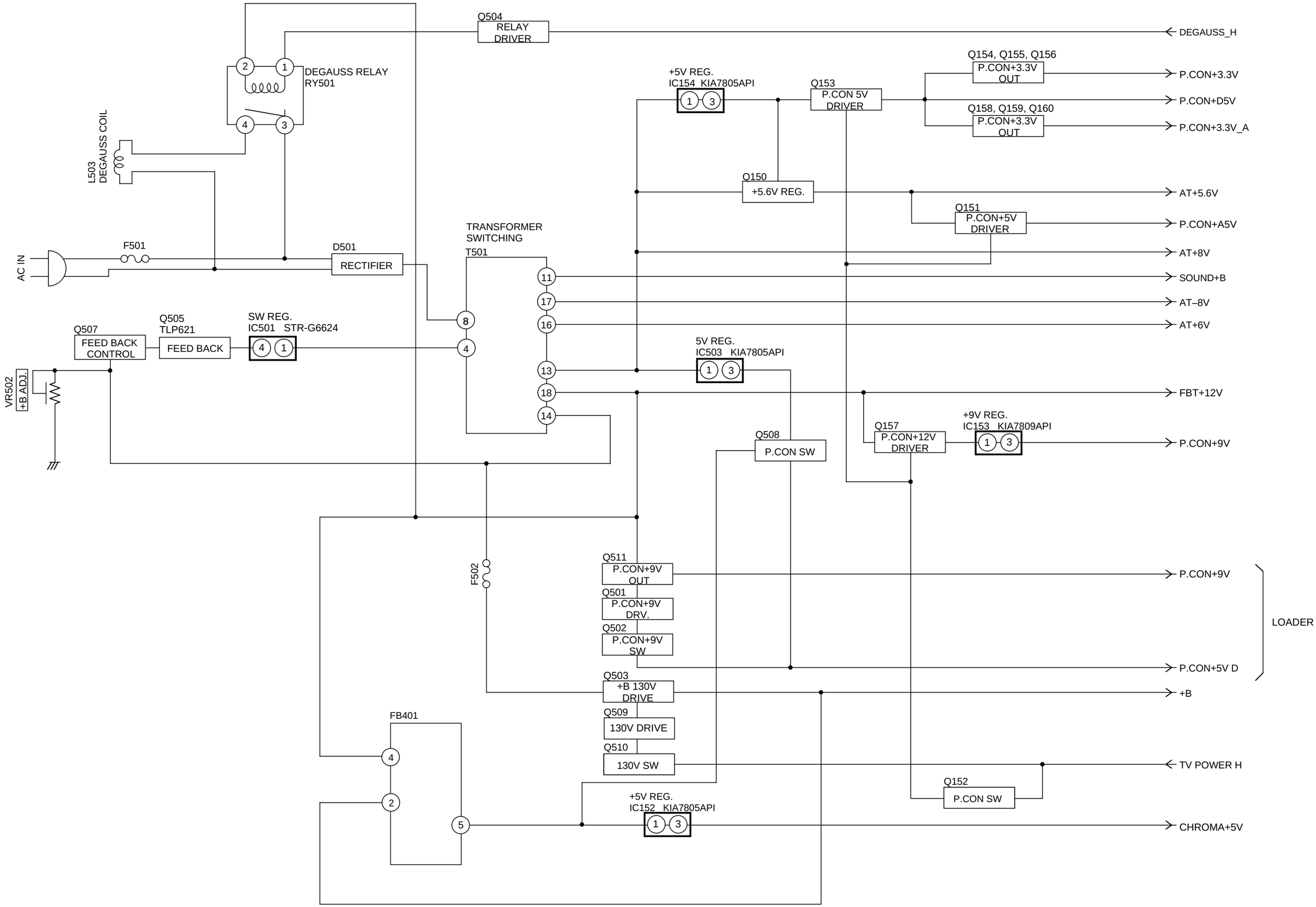
*A---AT+5V
*B---P.CON+9V
*C---CHROMA+5V
*D---P.CON+A5V
*E---AT-80
*F---AT+80
*G---P.CON+12V

DVD BLOCK DIAGRAM



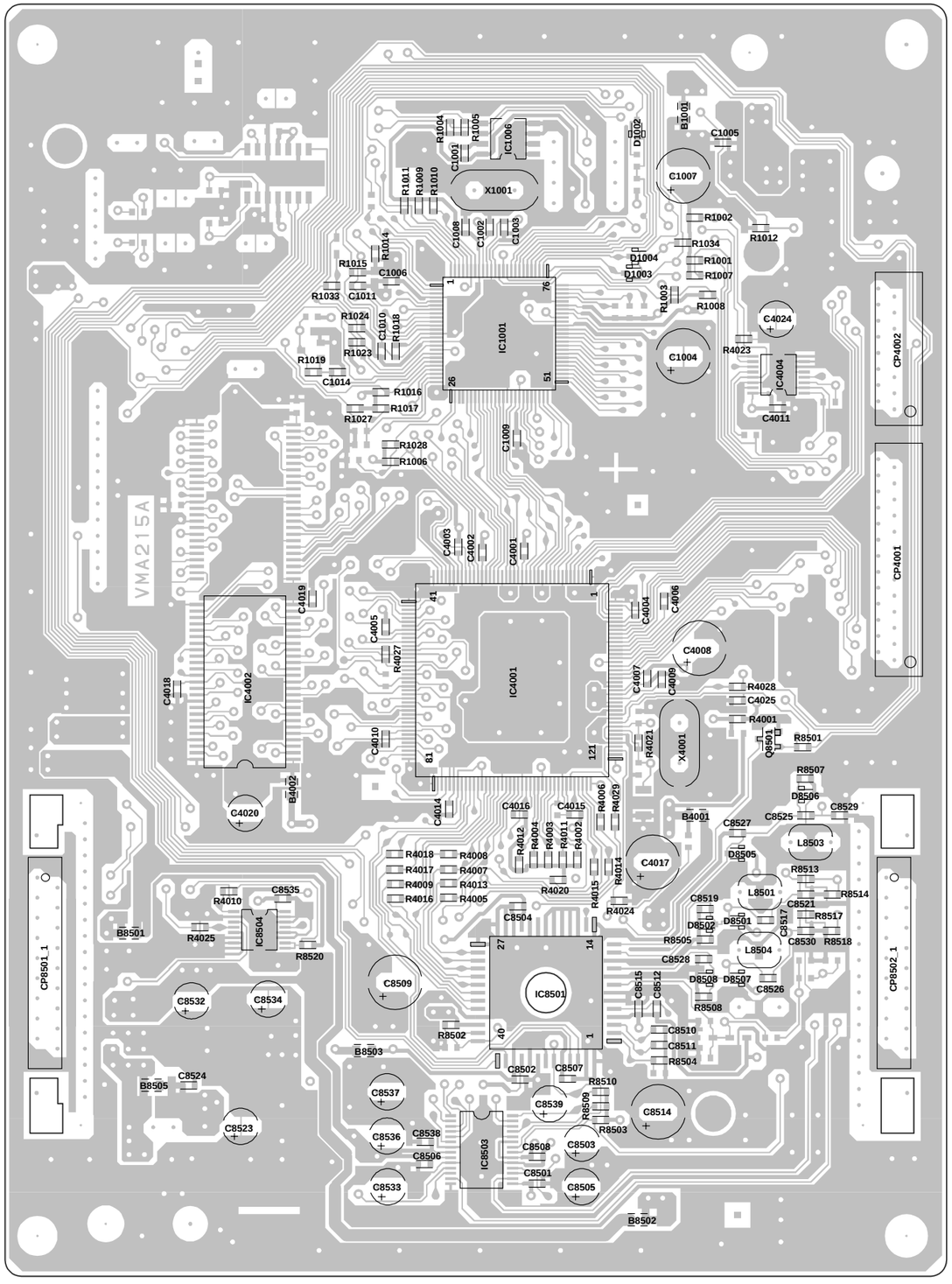
*A---P.CON+3.3V
*B---P.CON+D5V
*C---P.CON+A5V
*D---P.CON+5V
*E---P.CON+9V

POWER BLOCK DIAGRAM

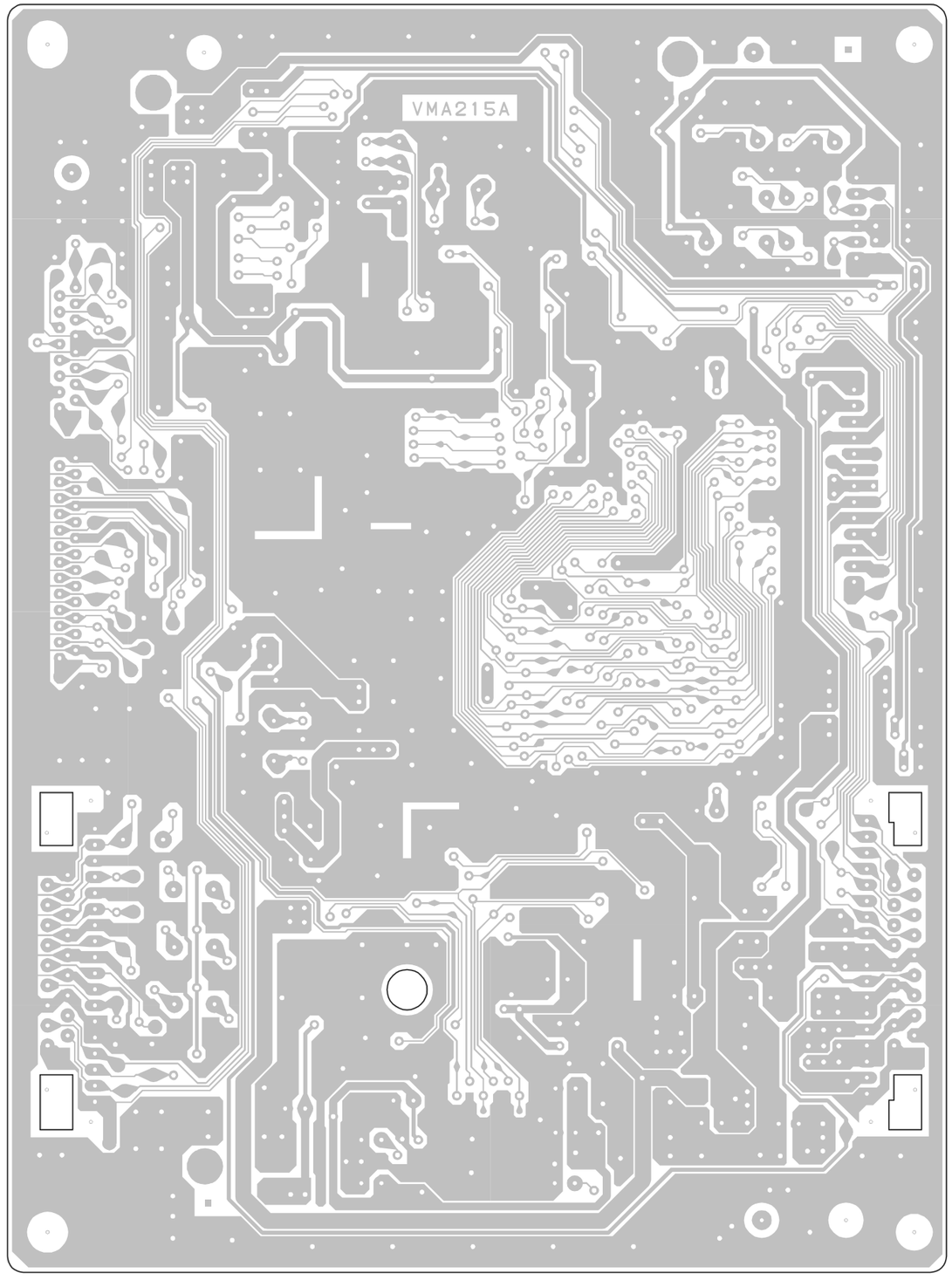


PRINTED CIRCUIT BOARDS

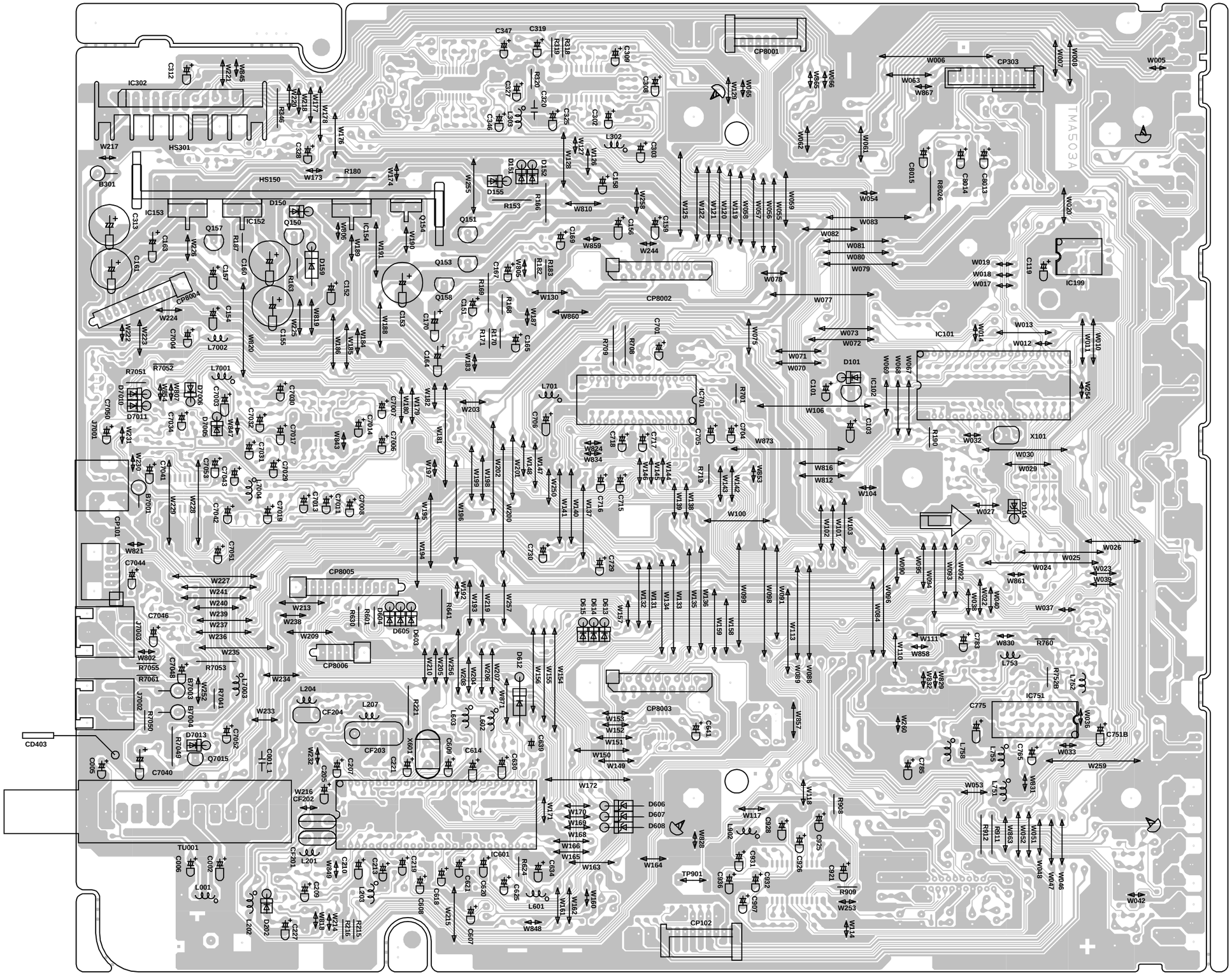
SYSCON (TOP SIDE)



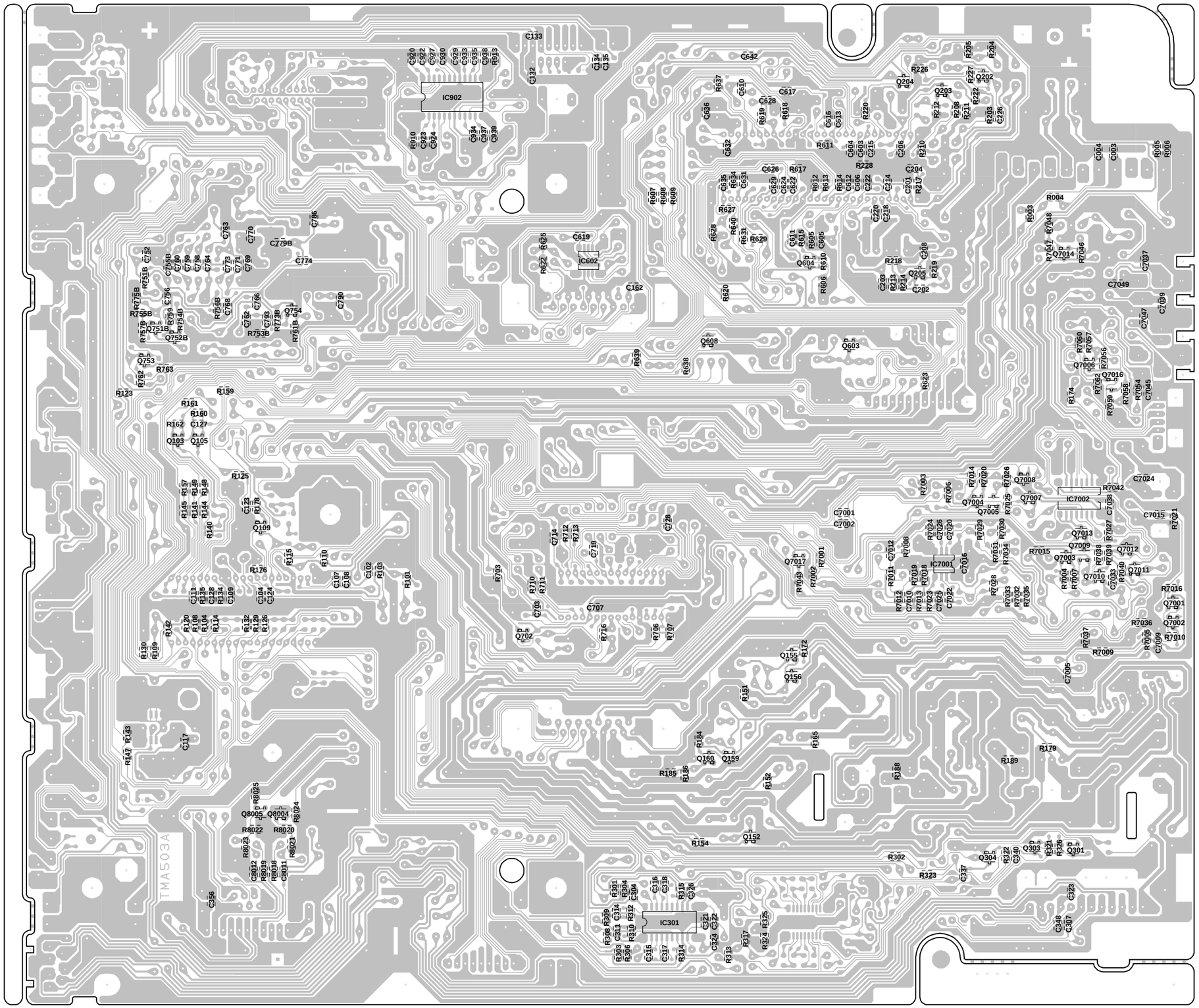
SYSCON (BOTTOM SIDE)



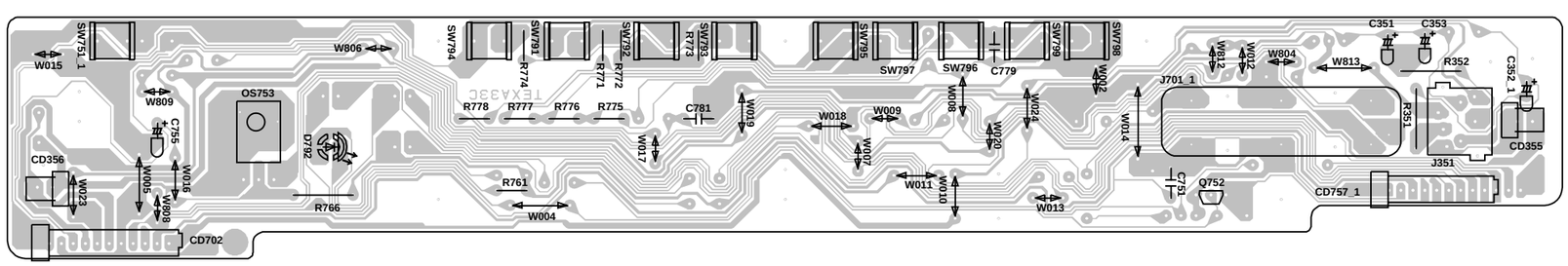
PRINTED CIRCUIT BOARDS
AV (INSERTED PARTS)
SOLDER SIDE



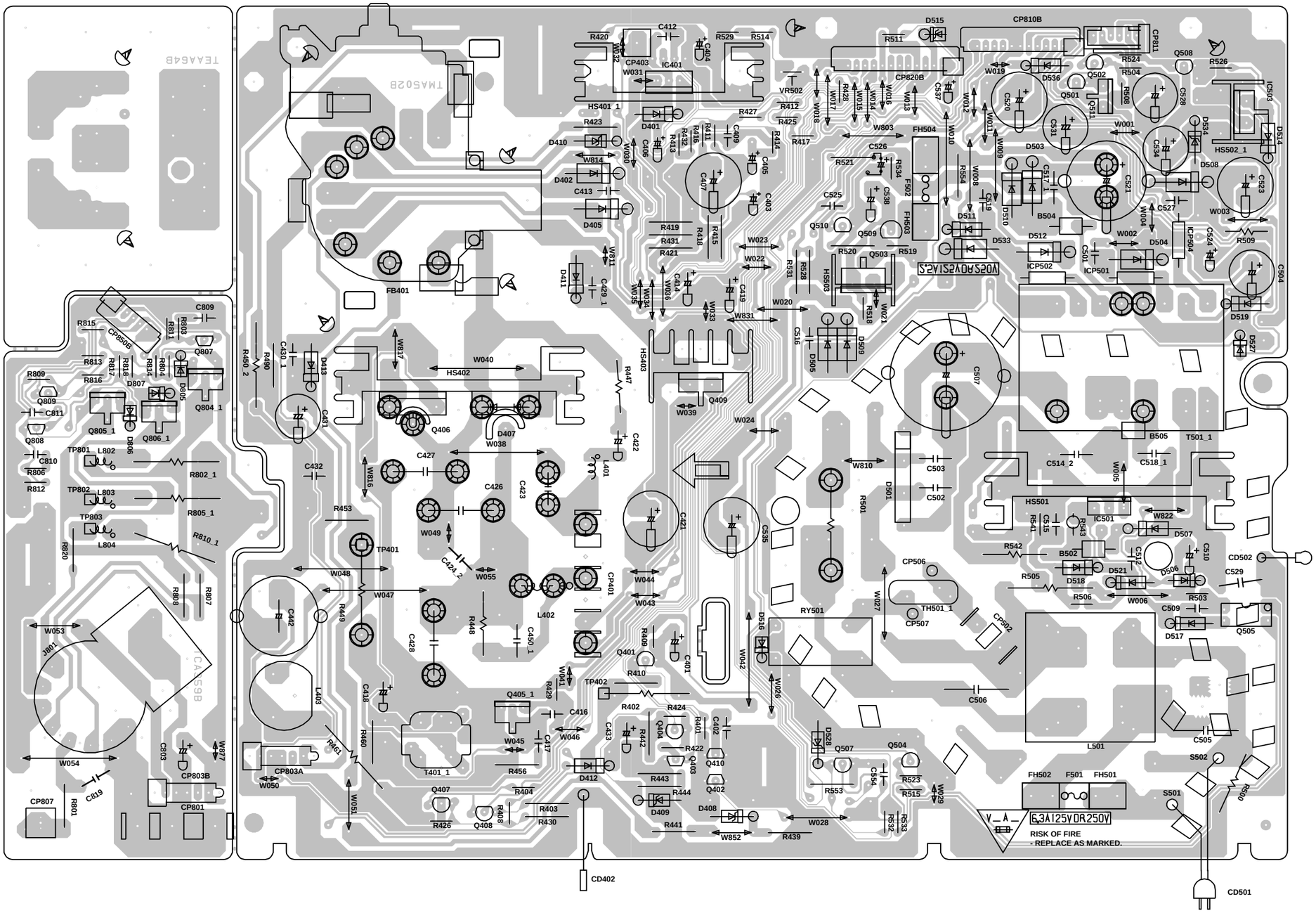
PRINTED CIRCUIT BOARDS
AV (CHIP MOUNTED PARTS)
SOLDER SIDE



OPERATION
SOLDER SIDE



PRINTED CIRCUIT BOARDS
MAIN/CRT
SOLDER SIDE



MPEG SCHEMATIC DIAGRAM (SYSCON PCB)

FROM/TO LOADER

CD4001 — 2S0Q0901

CP4001 IMSA-9615S-26C-P

1	SDT7	DVDDAT7
2	GND	
3	SDT6	DVDDAT6
4	GND	
5	SDT5	DVDDAT5
6	GND	
7	SDT4	DVDDAT4
8	GND	
9	SDT3	DVDDAT3
10	GND	
11	SDT2	DVDDAT2
12	GND	
13	SDT1	DVDDAT1
14	GND	
15	SDT0	DVDDAT0
16	GND	
17	DREQ	DVDREQ
18	GND	
19	DACK	DVDVALID
20	GND	
21	DERR	DVDERR
22	GND	
23	DBGN	DVDSOS
24	GND	
25	DCLK	DVDSTB
26	GND	

CD4002 — 2S0G0901

CP4002 IMSA-9615S-16C-P

1	HD INT	NC
2	HRST	HRST
3	GND	
4	TXD	
5	RXD	
6	SCLK	SSC-SCLK
7	RDY HIF	SSC-ATN
8	GND	
9	16M	
10	GND	
11	EMPH	NC
12	C2PO	
13	LRCK	
14	BCK	
15	CD-DATA	
16	SPDIF	

FROM/TO SYSCON

HRST, SSC-MRST, SSC-MTSR, SSC-SCLK, SSC-ATN, HD7, HD6, HD5, HD4, HD3, HD2, HD1, HD0, HA4, HA3, HA2, HA1, HWR#, MPGCS#, HRD#, MPGIRQ#, MPGRST#, MPGSTBY, HRDY

R4025 100

C4001 0.1 F

C4002 0.1 F

C4011 0.1 F

C4024 6.3V 47 KA

DIGITAL AUDIO SW. IC4004 SN74LV4052APW

16	15	14	13	12	11	10	9
VCC	X2	X1	X	X0	X3	A	B
1	2	3	4	5	6	7	8
Y0	Y2	Y	Y3	Y1	Inhibit	VEE	GND

R4023 10K

MPEG IC4001 ZR36710

DVDDAT7, DVDDAT6, DVDDAT5, DVDDAT4, DVDDAT3, DVDDAT2, DVDDAT1, DVDDAT0, DVDREQ, DVDSTB, DVDVALID, DVDSOS, DVDERR, MPGRST, MPGSTBY

R4001 2.2

C4007 0.001 B

C4008 6.3V 220 KA

X4001 27MHz

R4021 1M

C4004 0.1 F

C4006 0.1 F

C4009 0.047 B

C4025 0.1 F

FROM/TO VIDEO ENCORDER

P.CON+3.3VA

DGND

R4029 100

C4015 0.1 F

C4017 6.3V 220 KA

R4024 1K

B4001 N2012ZP600T25

P.CON+3.3V.MP

P.CON+3.3V

R4028 100

CLK27

AMCLK, CLK27, ABCLK, ALRCLK, SPDIF-DVD, ASDAT0, YUV0, YUV1, YUV2, YUV3, YUV4, YUV5, YUV6, YUV7, HSYNC, VSYNC, SPDIF-CD, DM1, D_LOAD-H

R4006 100 — ABCLK

R4014 180 — ALRCLK

R4010 100 — SPDIF-DVD

R4015 180 — ASDAT0

R4020 4.7K

R4002 4.7K

R4011 4.7K

R4003 4.7K

R4004 4.7K

R4012 4.7K

C4016 0.1 F

R4005 180 — YUV0

R4013 180 — YUV1

R4007 180 — YUV2

R4008 180 — YUV3

R4016 180 — YUV4

R4009 180 — YUV5

R4017 180 — YUV6

R4018 180 — YUV7

FROM/TO SDRAM

MA4, MA3, MA5, MA2, MA6, MA1, MA7, MA0, MA8, MA10, MA9, MA11, MCS0#, MRAS#, MPCLK, MCAS#, MWE#, MDQM, MD8, MD7, MD9, MD6, MD10, MD5, MD11, MD4, MD12, MD3, MD13, MD2, MD14, MD1, MD15, MD0

C4003 0.1 F

C4005 0.1 F

R4027 100

C4010 0.1 F

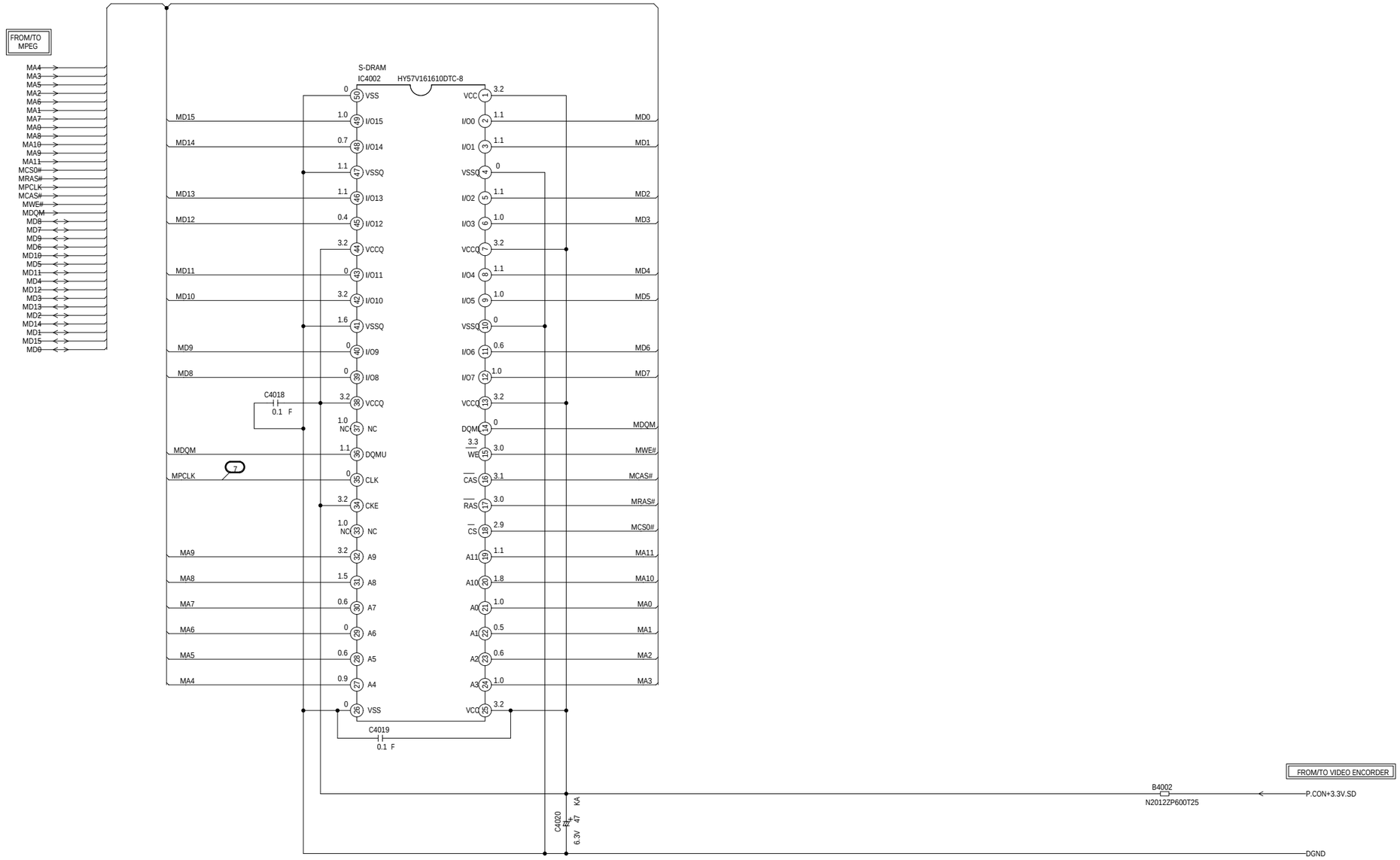
C4014 0.1 F

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB010 VMA215

SDRAM SCHEMATIC DIAGRAM
(SYSCON PCB)

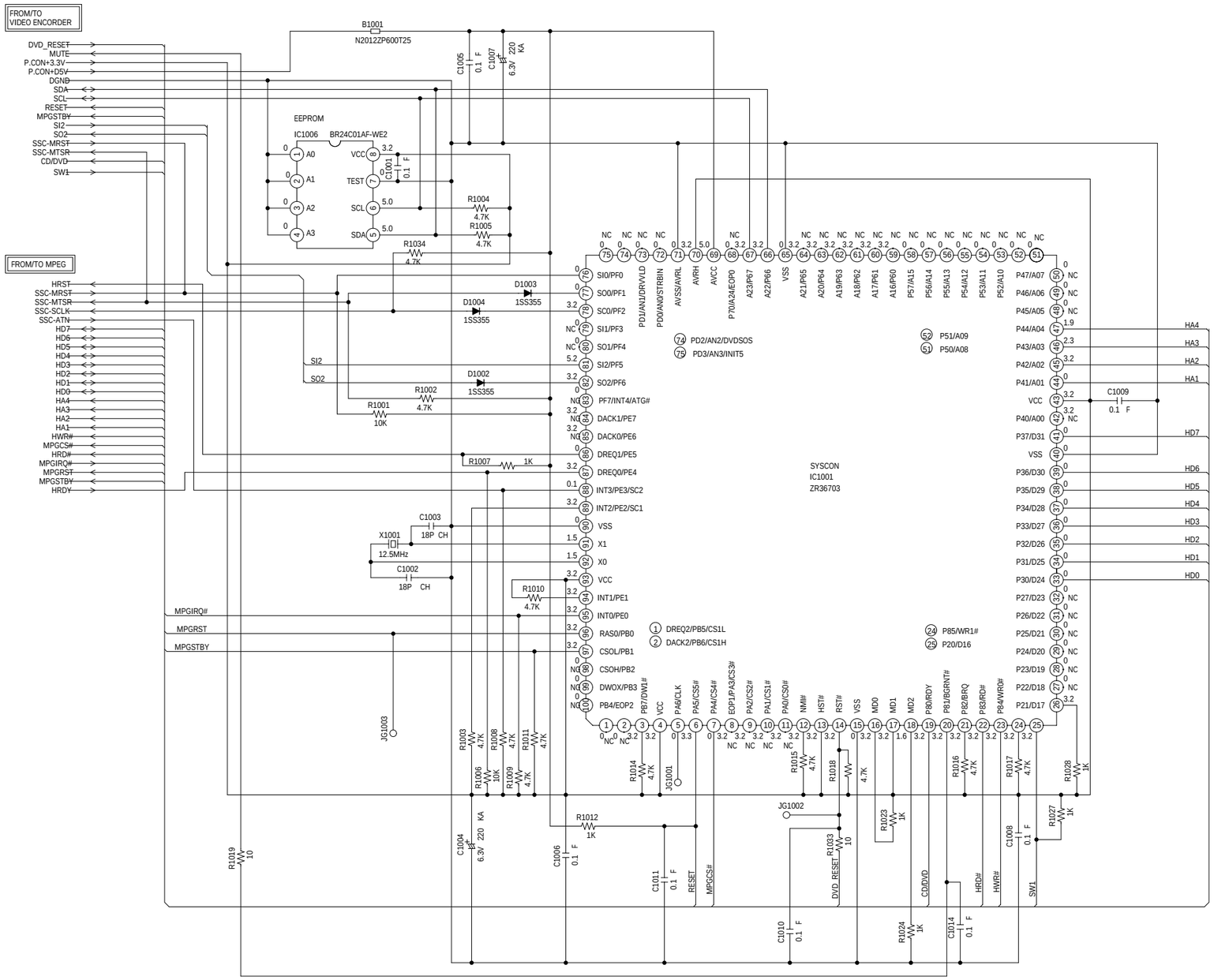


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SYSCON SCHEMATIC DIAGRAM

(SYSCON PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

VIDEO ENCORDER SCHEMATIC DIAGRAM

(SYSCON PCB)

FROM/TO MPEG

P.CON+3.3VA
DGND
P.CON+3.3V.MP
P.CON+3.3V
AMCLK
CLK27
ABCLK
ALRCLK
SPDIF-DVD
ASDAT0
YUV0
YUV1
YUV2
YUV3
YUV4
YUV5
YUV6
YUV7
HSYNC
VSYNC
SPDIF-CD
DM1
D_LOAD-H

FROM/TO SDRAM

DGND
P.CON+3.3V.SD

FROM/TO SYSCON

DVD_RESET
MUTE
P.CON+3.3V
P.CON+D5V
DGND
SDA
SCL
RESET
MPGSTBY
SI2
SO2
SSC-MRST
SSC-MTSR
CD/DVD
SW1

VIDEO ENCORDER
IC8501
BT865AKRF

ALT/ADDR
P0
P1
P2
P3
P4
P5
P6
P7
GND
VDD
TTXREQ
SDA
SCL
SLAVE
CLK
VDD3V
GND
VDD
RESET
BLANK
VSYNC
HSYNC
AGND
AGND
Y7
Y6
VDD
GND
Y5
Y4
Y3
Y2
Y1
Y0
NC
FIELD
RGBOUT
C/R
AGND
CVBS/G
AGND
CVBS/B
NC
AGND
AGND
COMP
VAA
VREF
VBIAS
AGND
AGND

27 TTXDAT
13 Y/CVBS
39 SLEEP
1 FS ADJUST

R8501 39K
Q8501 2SC2412K STND BY
R8502 10K
B8503 N2012ZP600T25
B8502 N2012ZP600T25
B8505 N2012ZP600T25
B8501 N2012ZP600T25

C8504 0.1 F
C8509 6.3V 220 KA
C8514 6.3V 220 KA
C8515 0.1 F
C8512 0.1 F
C8510 0.1 F
C8511 0.1 F
R8504 75 +-1%
C8502 0.1 F
C8507 0.1 F
C8532 6.3V 47 KA
C8523 6.3V 47 KA
C8524 0.1 F
C8535 0.1 F
C8534 6.3V 47 KA

D8501 1SS355
D8502 1SS355
D8505 1SS355
D8506 1SS355
D8507 1SS355
D8508 1SS355
R8505 75 +1%
R8506 75 +1%
R8507 75 +1%
R8508 75 +1%
C8517 22P CH
C8525 22P CH
C8526 22P CH
L8501 1.8uH
L8503 1.8uH
L8504 1.8uH
0405
R8513 1K
R8514 1K
R8517 1K
R8518 1K
C8519 270P CH
C8521 330P CH
C8527 270P CH
C8529 330P CH
C8528 150P CH
C8530 220P CH

C8533 6.3V 22 KA
C8536 6.3V 22 KA
C8537 6.3V 22 KA
C8538 0.1 F
C8506 0.1 F
C8505 6.3V 22 KA
C8501 0.1 F
C8508 0.1 F
C8503 6.3V 22 KA
C8539 6.3V 22 KA
R8503 10K
R8509 10K
R8510 10K
R8520 1K

PCM1716E STEREO DAC
IC8503

VCC1
VOUTL
NC
EXTL
AGND2L
VCC2L
ZERO
RST
CSI/IWO
MODE
MUTE
MD/DMO
MC/DM1
ML/IIS
AGND1
VOUTR
NC
EXTR
AGND2R
VCC2R
VDD
DGND
XTO
XTI
CLKO
BCKIN
DIN
LRCIN

DIGITAL AUDIO SW
SN74LV4052APW
IC8504
VCC
X2
X1
X
X0
X3
A
B
Y0
Y2
Y
Y3
Y1
Inhibit
VEE
GND

FROM/TO POWER

CP8501_1
IMSA-9604S-18Z14

SI2	TX	1
SO2	RX	2
SSC-MRST	SSC-MRST	3
SSC-MTSR	SSC-MTSR	4
SW1	SW1	5
DVD_RESET	DVD RESET	6
D_LOAD-H	D LOAD	7
	P.CON+A5V	8
	GND	9
	GND	10
	P.CON+3.3VA	11
	P.CON+D5V	12
	P.CON+D5V	13
	GND	14
	P.CON+3.3V	15
	P.CON+3.3V	16
	GND	17
SPDIF	SPDIF-134	18

CP8502_1
IMSA-9604S-18Z14

	GND	1
	CVBS(DVD Y)	2
	GND	3
	RED(DVD C)	4
	GND	5
	GREEN(CVBS)	6
	GND	7
NC		8
	GND	9
AUDIO_L	AUDIO-L	10
	GND	11
AUDIO_R	AUDIO-R	12
	GND	13
	GND	14
NC		15
ZERO	ZERO	16
DVD_RESET	DVD RESET	17
MUTE	MUTE	18

PCB010
VMA215

DIGITAL AUDIO SIGNAL(PB)
RECORD COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
AUDIO SIGNAL(PB)

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

POWER SCHEMATIC DIAGRAM (AV PCB)

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

DIGITAL AUDIO SIGNAL(PB)
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
PLAYBACK VIDEO SIGNAL
AUDIO SIGNAL(PB)

FROM/TO TV POWER

CP8004 51048-1110
1 AT+8V
2 SOUND GND
3 SOUND+B
4 AT+6V
5 AT-8V
6 GND
7 GND
8 FBT+8V
9 FBT+12V
10 CHROMA+5V
11 X-RAY TEST

FROM/TO DEFLECTION

CP8005 51048-1210 L151 W5T29X7.5X19
1 H.OUT
2 P.CON+30V
3 ACL
4 GND
5 V.OUT
6 AFC
7 VD
8 POWER FAIL
9 TV POWER ON H
10 EW OUT
11 DEGAUSS H
12 P.CON+9V

CP8001 173979-9
1 DVD RESET
2 SW1
3 VCC
4 D LOAD
5 NC
6 NC
7 GND
8 SSC-MTSR
9 SSC-MRST

FROM/TO VIDEO ENCORDER

CP8002 IMSA-9604S-18Z14
18 TX
17 RX
16 SSC-MRST
15 SSC-MTSR
14 SW1
13 DVD RESET
12 D LOAD
11 P.CON+A5V
10 GND
9 GND
8 P.CON+3.3VA
7 P.CON+D5V
6 P.CON+D5V
5 GND
4 P.CON+3.3V
3 P.CON+3.3V
2 GND
1 SPDIF-134

CP8003 IMSA-9604S-18Z14
18 GND
17 CVBS(DVD Y)
16 GND
15 RED(DVD C)
14 GND
13 GREEN(CVBS)
12 GND
11 NC
10 GND
9 AUDIO-L
8 GND
7 AUDIO-R
6 GND
5 GND
4 NC
3 ZERO
2 DVD RESET
1 MUTE

CD8001 2S0I0101
CD8002 2S0I0101

+5.6V REG. Q150 2SD1246
+5V REG IC IC152 KIA7805API
+9V REG IC IC153 KIA7809API
+5V REG IC IC154 KIA7805API
P.CON5V DRIVER Q151 2SB1131
P.CON12V DRIVER Q157 2SB1131
P.CON5V DRIVER Q153 2SB1131
P.CON SW Q152 KRC111SRTK
3.3V OUT Q154 2SB1143
3.3V CTL Q155 2SC2412K
3.3V CTL Q156 2SC2412K
3.3V CTL Q159 2SC2412K
3.3V CTL Q160 2SC2412K
3.3V OUT Q158 KTA1271_Y

FROM/TO SOUND AMP
SOUND_GND
SOUND+B
P.CON+9V
P.CON+A5V
GND

FROM/TO COMB FILTER
P.CON+9V
P.CON+A5V
GND

FROM/TO STEREO
P.CON+A5V
GND
AT+5.6V
P.CON+9V

FROM/TO AV SW
GND
P.CON+9V
DVD_VIDEO

FROM/TO VIF/SIF/CHROMA
DVD_GND
EW_OUT
V.OUT
AFC
H.OUT
ACL
DVD_Y
DVD_C
VD
GND
CHROMA+5V
P.CON+9V
POWER_FAIL

FROM/TO MICON/TUNER
GND
P.CON+A5V
P.CON+30V
CHROMA+5V
POWER_ON_H
DVD_RESET
POWER_FAIL
RX
TX
VD
AFC
AT+5.6V
X-RAY_TEST
DEGAUSS_H

FROM/TO I/O
P.CON+9V
AT+8V
P.CON+D5V
SPDIF-134
AT+5.6V
P.CON+12V
GND
ZERO
SYS_MUTE
DVD_AUDIO_L
DVD_AUDIO_R
AT-8V

PCB250 TMA503

MICON /TUNER SCHEMATIC DIAGRAM
(AV PCB)

TU001 TECC1040PG32D

FROM/TO DEFLECTION
CD403

CP101 TKC-M06X-A1
GND 1
I2C SCL 2
I2C SDA 3
I2C OFF 4
AGC 5
NC 6

SCL
SDA
I2C_OFF
TUNER_AGC
R174 100

FROM/TO I/O
TV/DVD
EXT_MUTE

FROM/TO VIF/SIF/CHROMA
TUNER_AGC
TUNER_IF
SDA
SCL
OSD_Y
OSD_B
OSD_G
OSD_R
POWER_ON_H
SYNC_VIDEO
AFT
TV/DVD

FROM/TO POWER
TX
X-RAY_TEST
P.CON+30V
CHROMA+5V
POWER_ON_H
DVD_RESET
POWER_FAIL
GND
RX
VD
AFC
AT+5.6V
DEGAUSS_H

FROM/TO AV SW
SWD_V.OUT
SDA
SCL
GND

FROM/TO SOUND AMP
POWER_ON_H
A_MUTE
SDA
SCL

FROM/TO STEREO
SDA
SCL

FROM/TO OPERATION
CP102 A2001WR2-9P
1 REMOCON OUT
2 GND
3 AT+5.6V
4 POWER ON LED
5 NC
6 KEY A
7 NC
8 NC
9 KEY B

RESET IC
IC102 PST600C
VCC GND V.OUT

MICON IC
IC101 OEC6063C

MEMORY IC
IC199 S-24C08ADPA-01

PCB250
TMA503

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

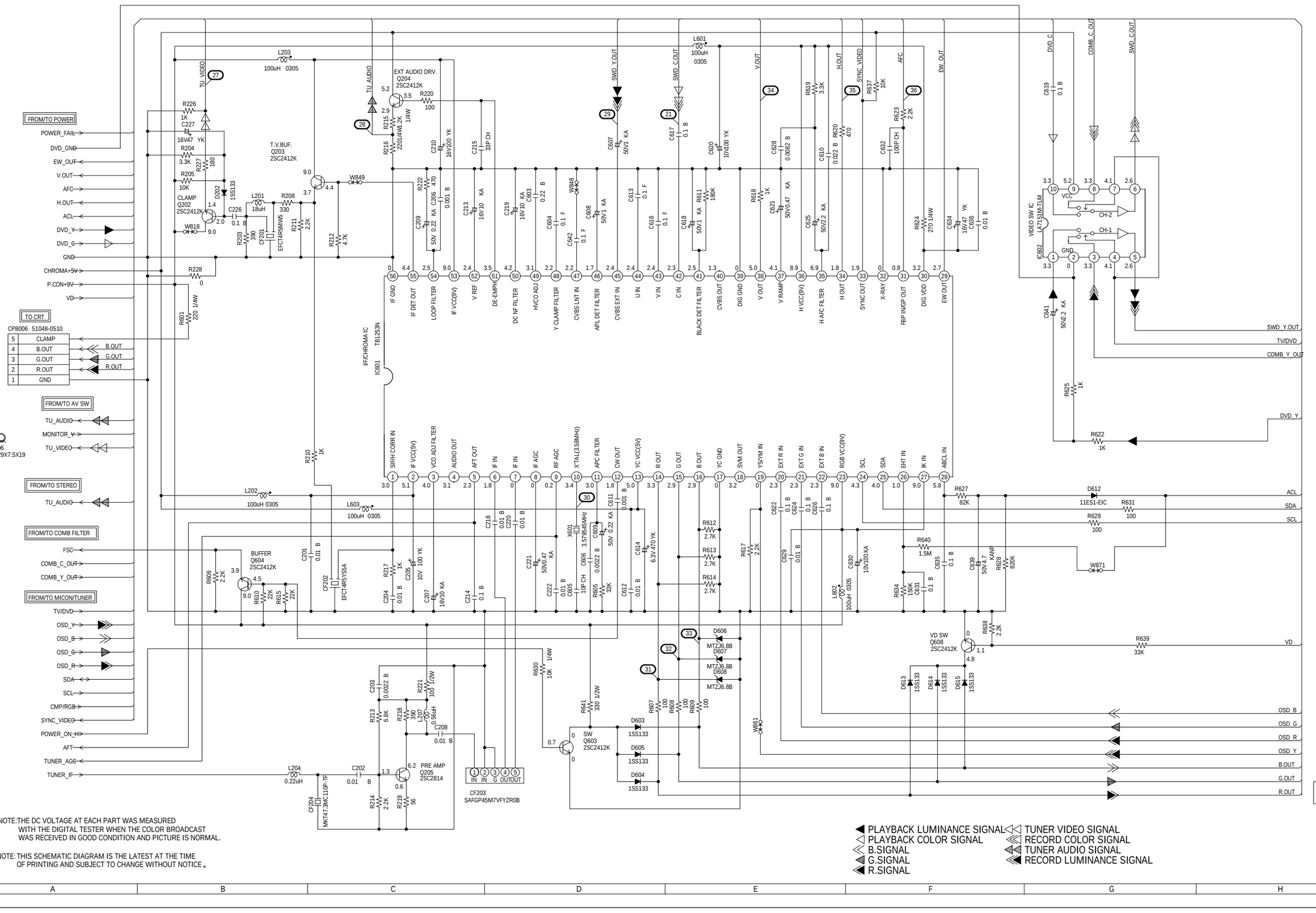
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

LUMINANCE SIGNAL
B.SIGNAL
G.SIGNAL
R.SIGNAL
TUNER VIDEO SIGNAL
PLAYBACK VIDEO SIGNAL

CAUTION: DIGITAL TRANSISTOR

VIF/SIF/CHROMA SCHEMATIC DIAGRAM
(AV PCB)



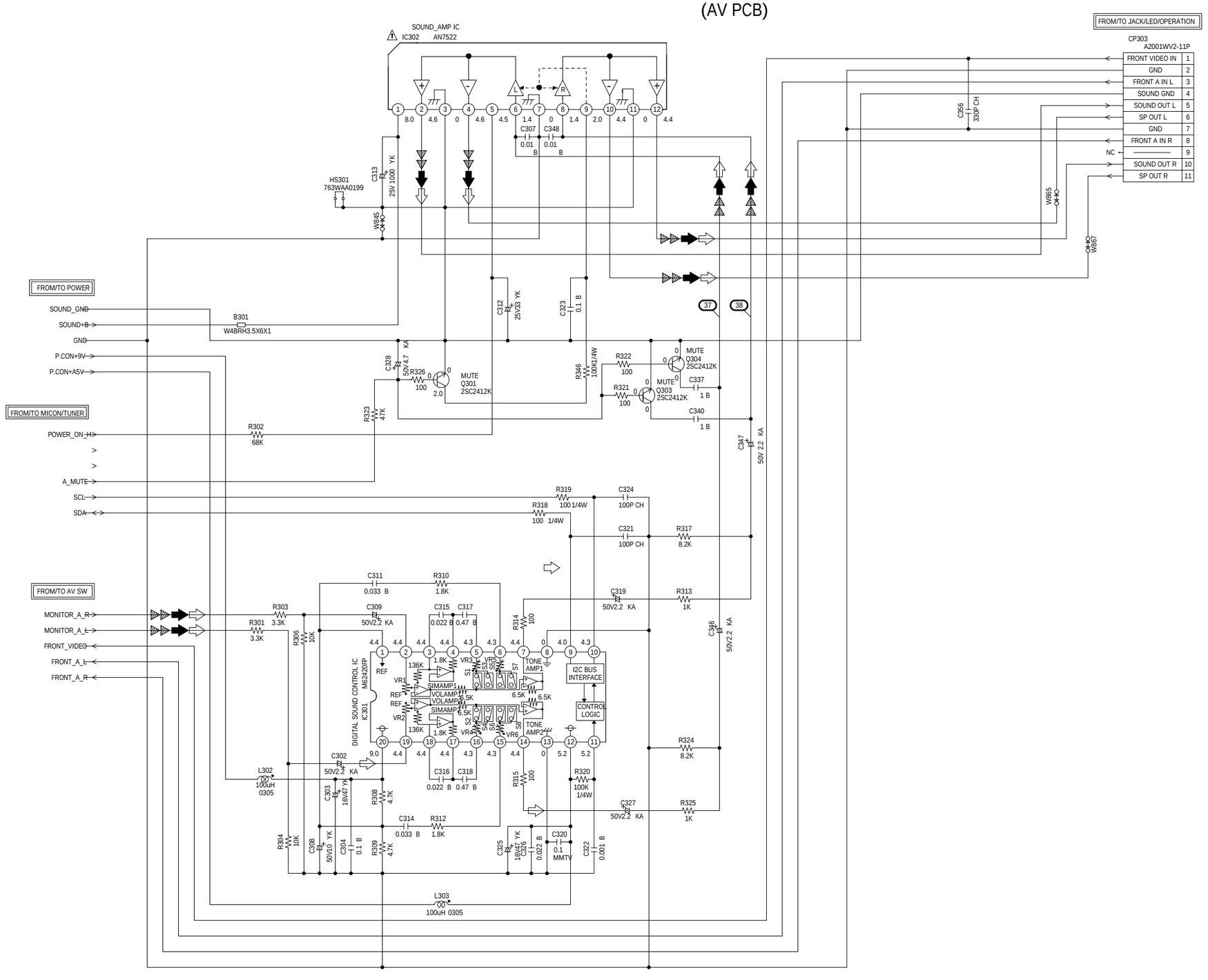
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

◀ PLAYBACK LUMINANCE SIGNAL
◁ PLAYBACK COLOR SIGNAL
≪ B.SIGNAL
◀◀ G.SIGNAL
◀◀◀ R.SIGNAL
◁◁ TUNER VIDEO SIGNAL
≪ RECORD COLOR SIGNAL
◀◀ TUNER AUDIO SIGNAL
◀◀◀ RECORD LUMINANCE SIGNAL

SOUND AMP SCHEMATIC DIAGRAM

(AV PCB)



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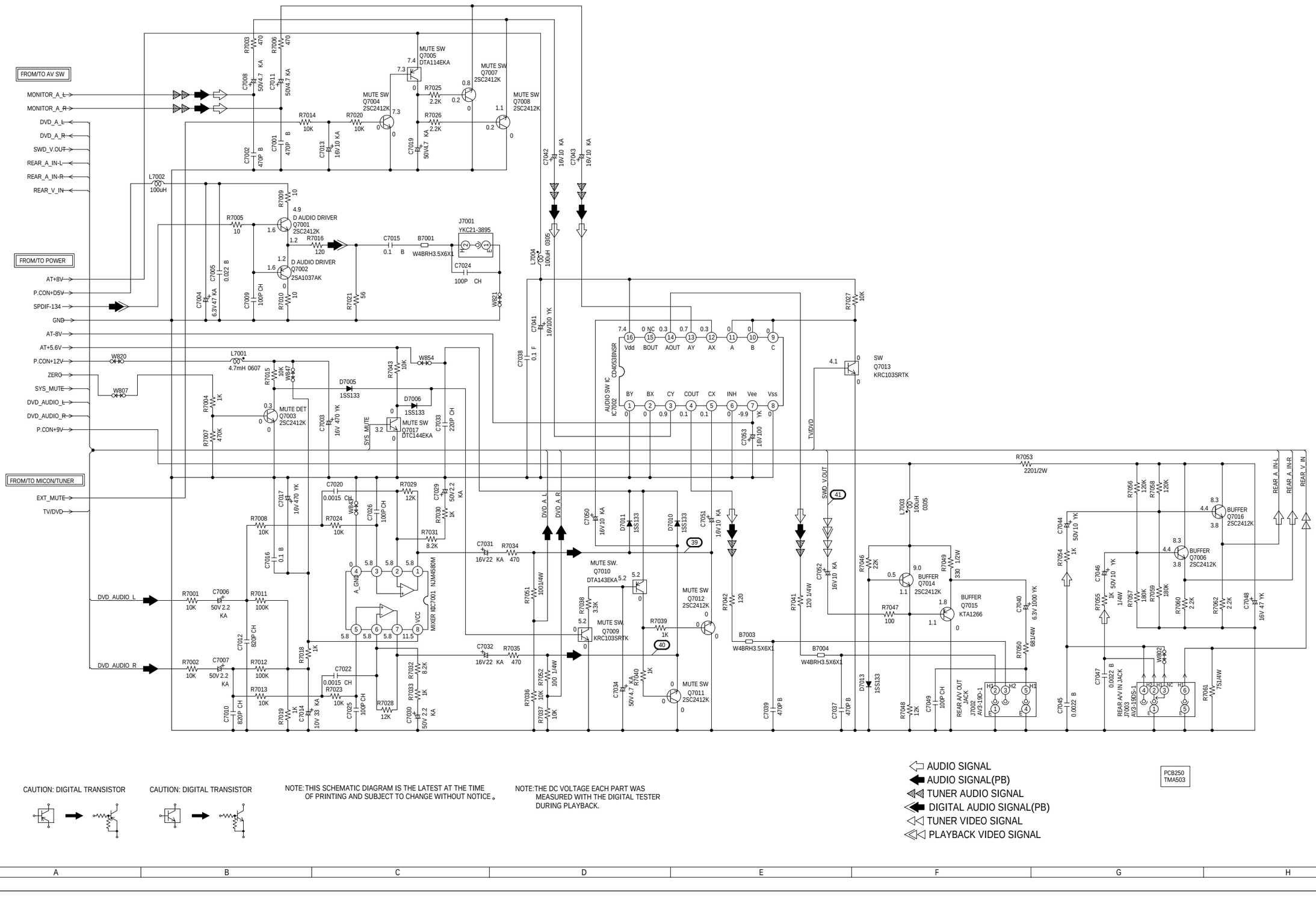
CAUTION: DIGITAL TRANSISTOR

AUDIO SIGNAL

AUDIO SIGNAL(PB)

TUNER AUDIO SIGNAL

IN/OUT SCHEMATIC DIAGRAM
(AV PCB)



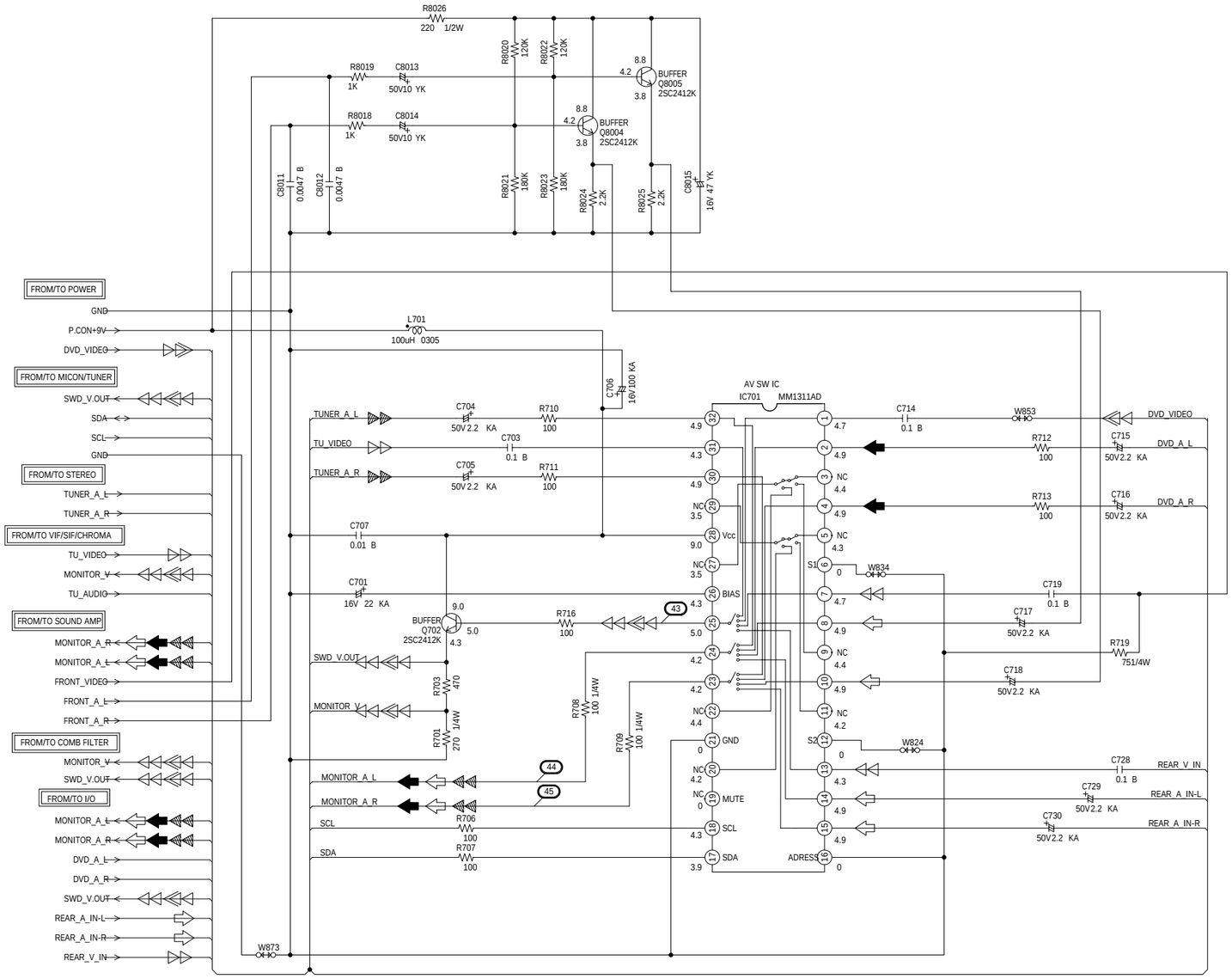
CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

AV SW SCHEMATIC DIAGRAM
(AV PCB)



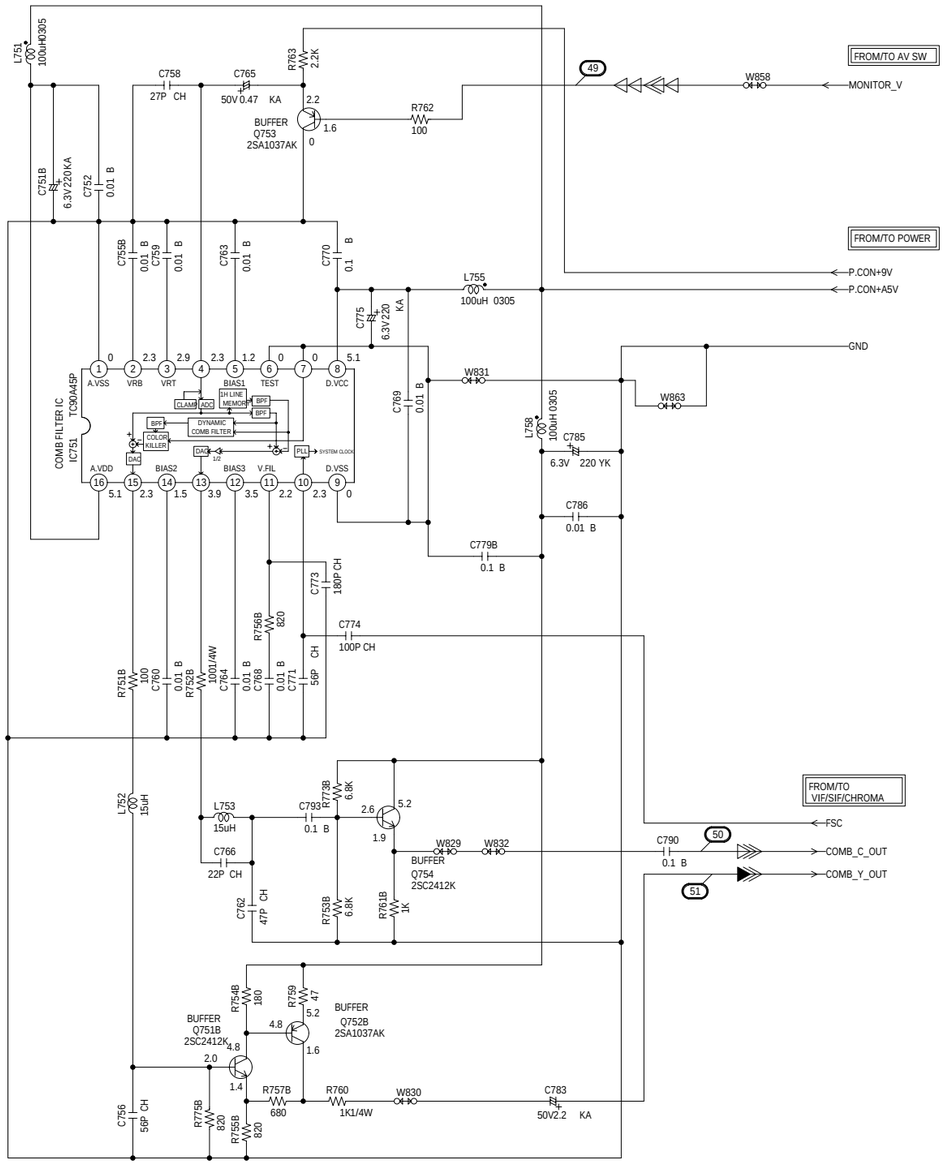
NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

TUNER AUDIO SIGNAL
TUNER VIDEO SIGNAL
PLAYBACK VIDEO SIGNAL
AUDIO SIGNAL
AUDIO SIGNAL(PB)

PCB250
TMA503

COMB FILTER SCHEMATIC DIAGRAM
(AV PCB)



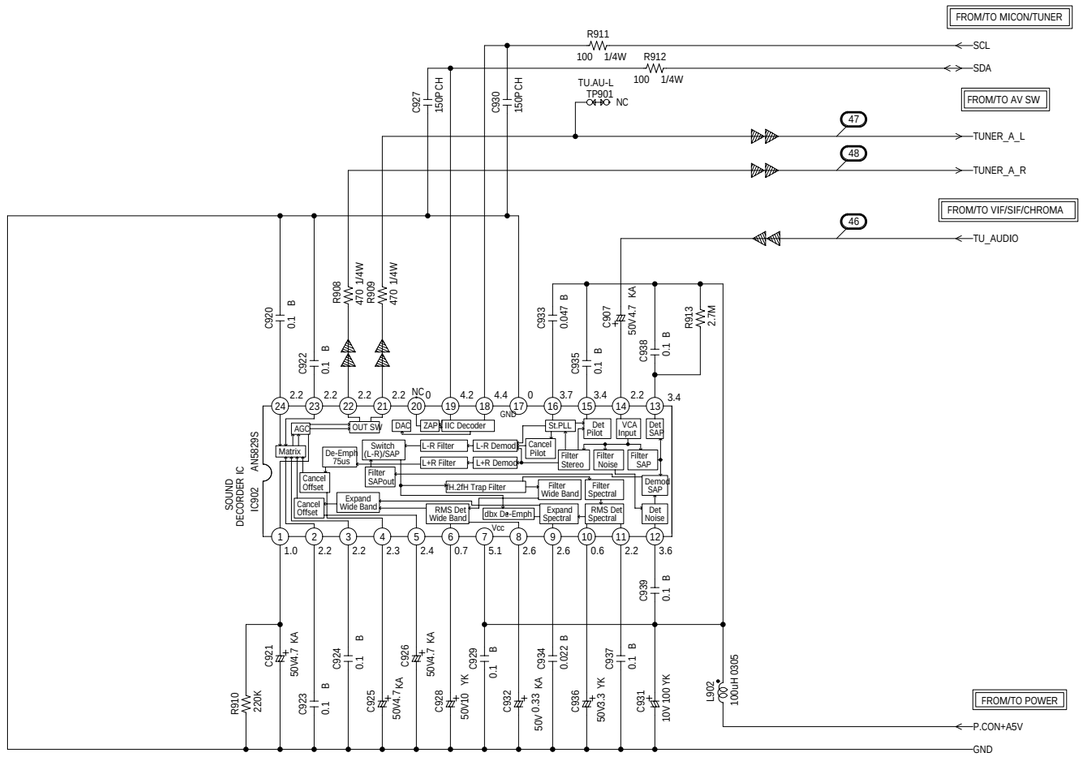
PCB250
TMA503

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

- RECORD COLOR SIGNAL
- RECORD LUMINANCE SIGNAL
- TUNER VIDEO SIGNAL
- PLAYBACK VIDEO SIGNAL

STEREO SCHEMATIC DIAGRAM
(AV PCB)



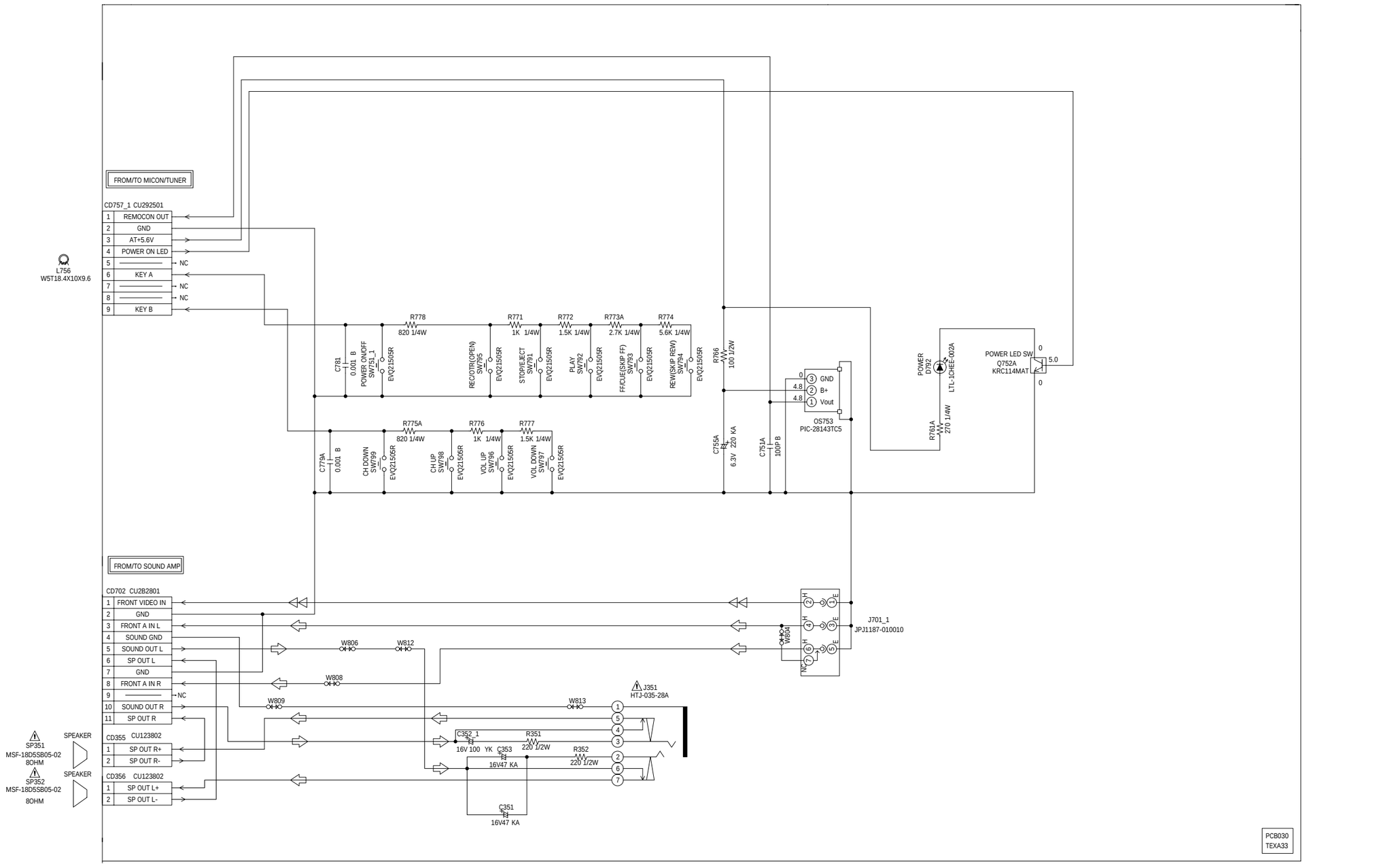
PCB250
TMA503

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

TUNER AUDIO SIGNAL

OPERATION SCHEMATIC DIAGRAM
(OPERATION PCB)



TUNER VIDEO SIGNAL
AUDIO SIGNAL

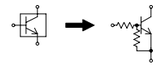
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR



TV POWER SCHEMATIC DIAGRAM (MAIN PCB)

6.3A 125V 2.5A 125V 4A 125V

CAUTION:FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F501)
,2.5A 125V(F502) AND 4A 125V(ICP501,ICP502,ICP504).

ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE
N'UTOLISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F501)
,2.5A 125V(F502) ET 4A 125V(ICP501,ICP502,ICP504).

CAUTION: ICP501,ICP502,AND ICP504 ARE MANUFACTURED BY
LITTELFUSE INC.,TYPE 251.

CAUTION: ⏚ IS THE LIVE CONNECTION

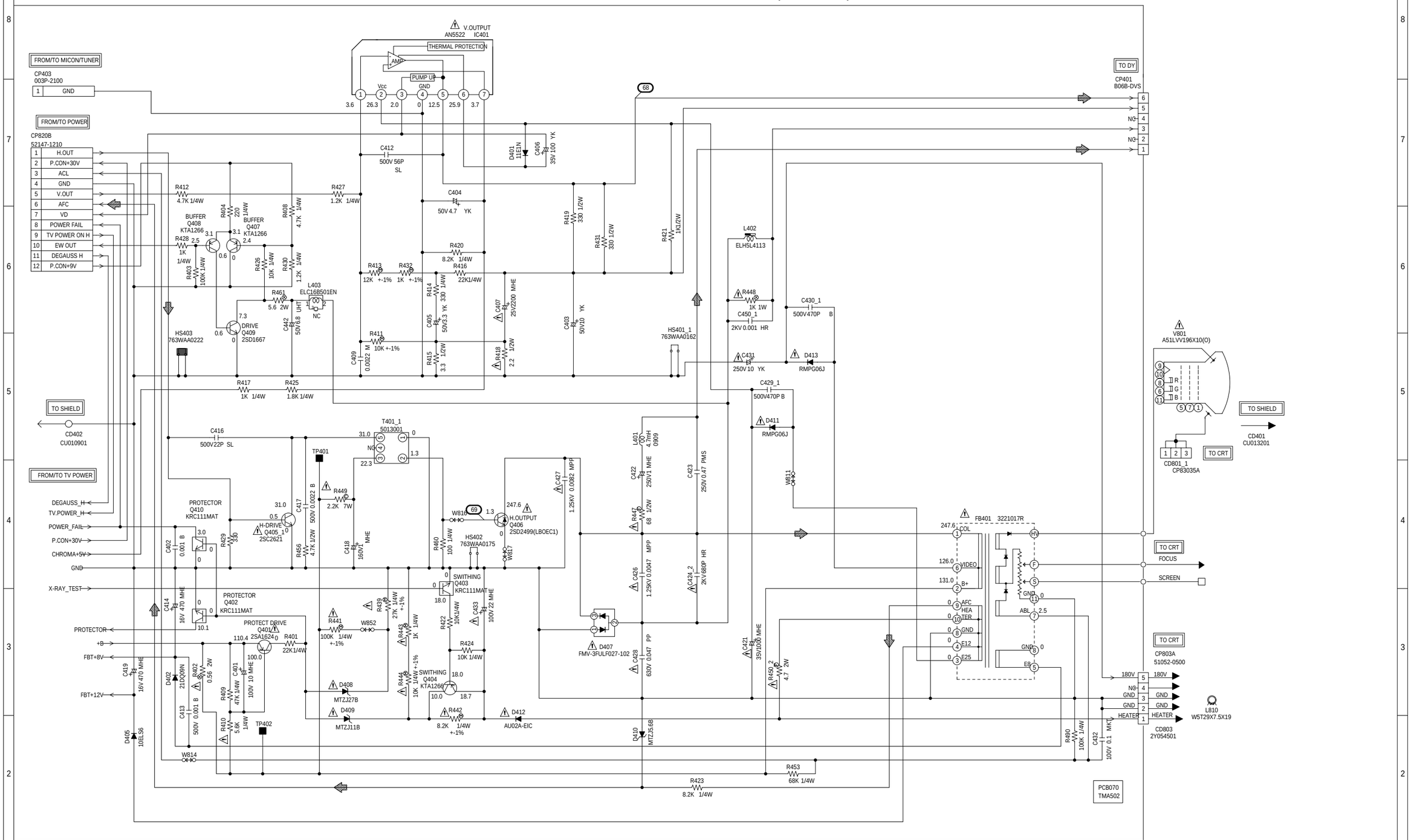
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

DEFLECTION SCHEMATIC DIAGRAM (MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

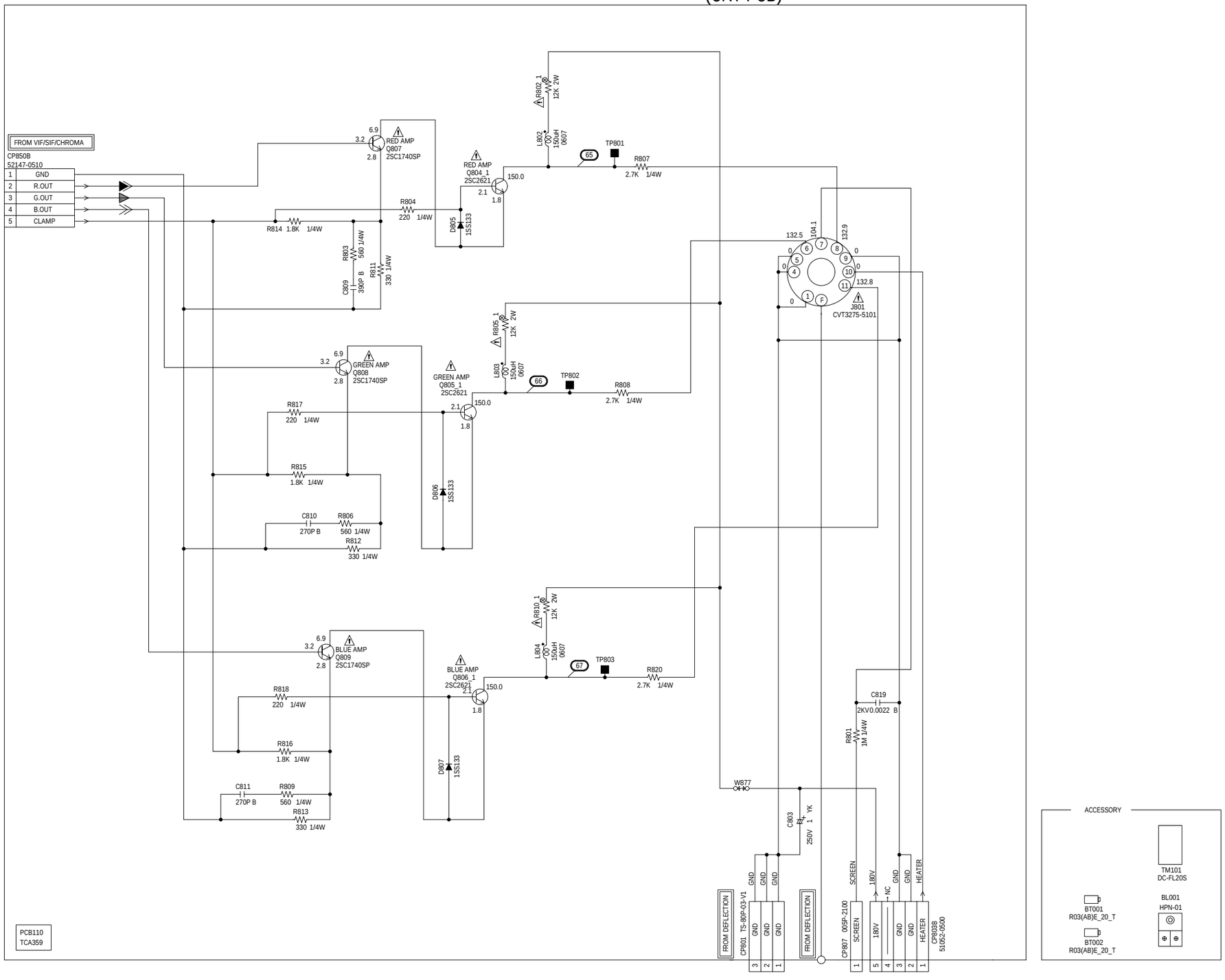
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: DIGITAL TRANSISTOR

DEFLECTION SIGNAL

CRT SCHEMATIC DIAGRAM

(CRT PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

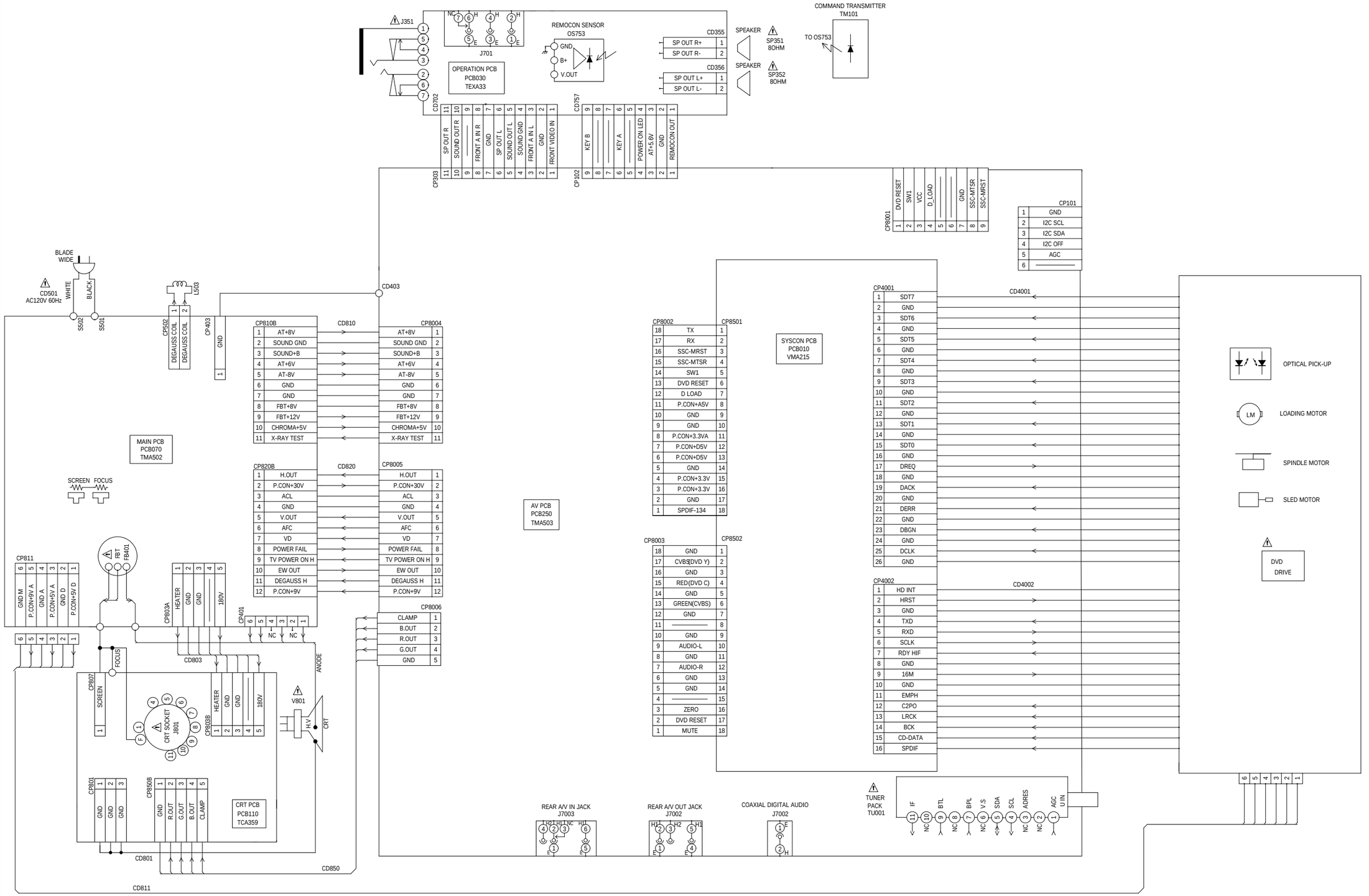
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL

INTERCONNECTION DIAGRAM



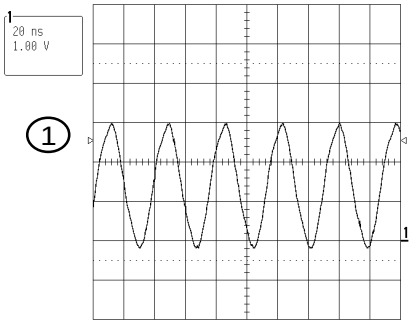
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

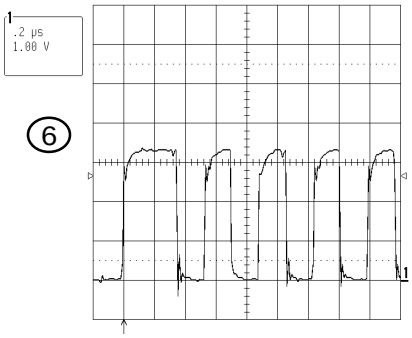
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

WAVEFORMS

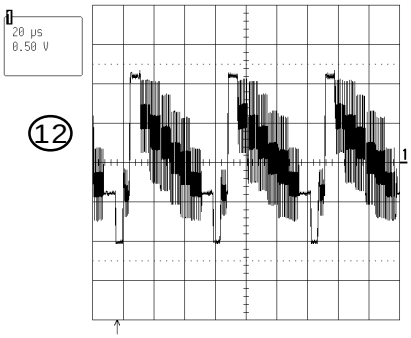
MPEG



①

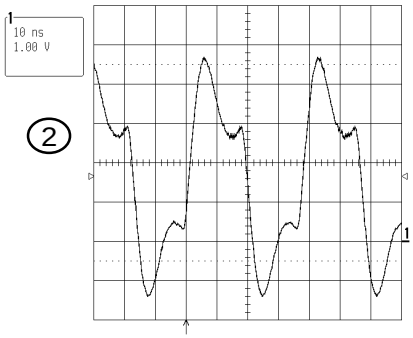


⑥

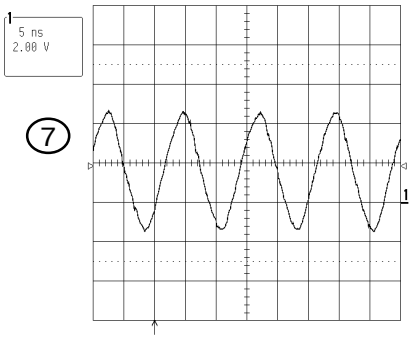


⑫

SDRAM

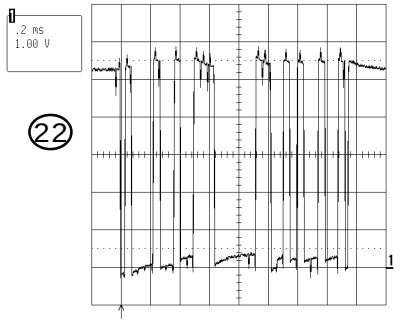


②



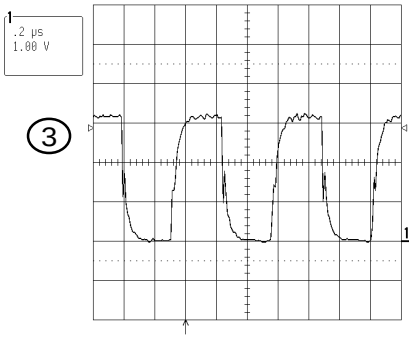
⑦

MICON/TUNER

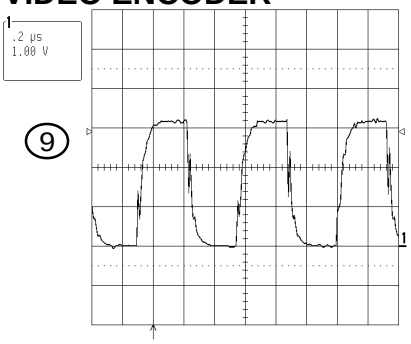


㉒

VIDEO ENCODER



③



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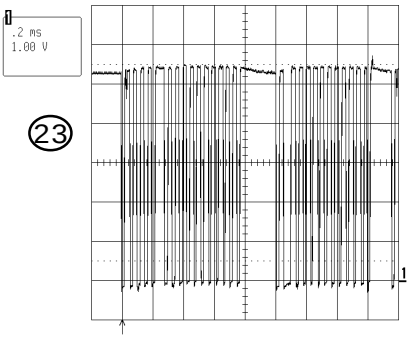
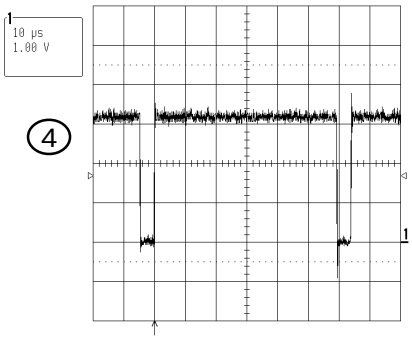
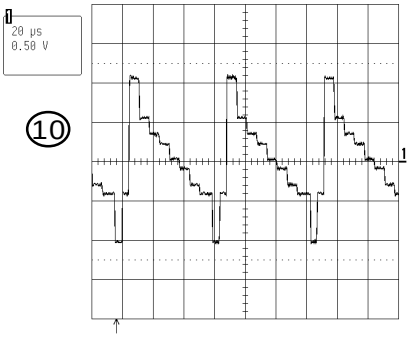


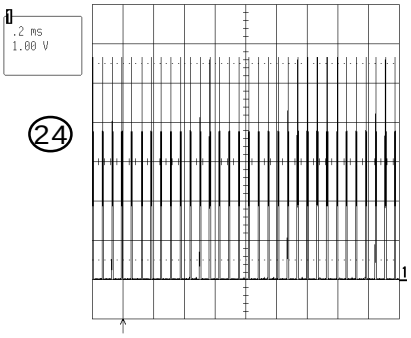
㉓



④



⑩



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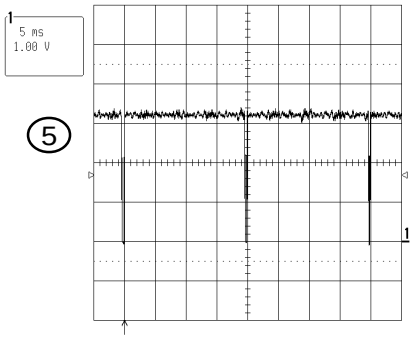
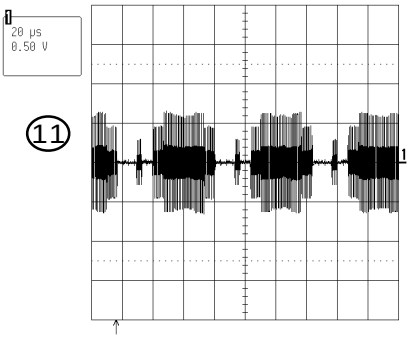
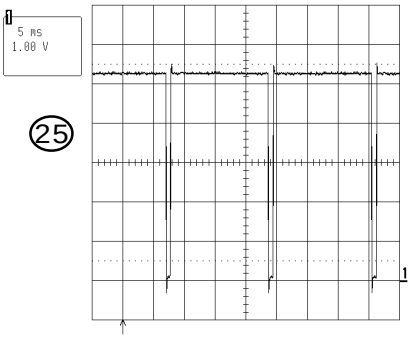


⑤



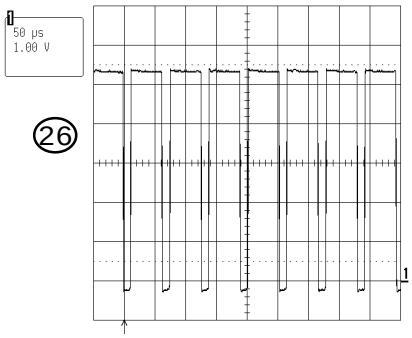
⑪



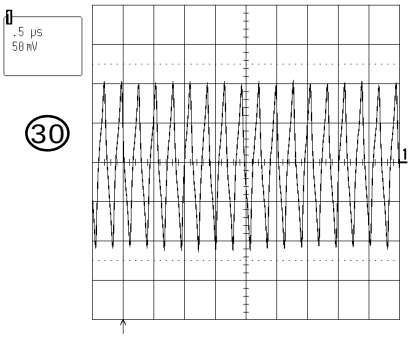
㉕

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

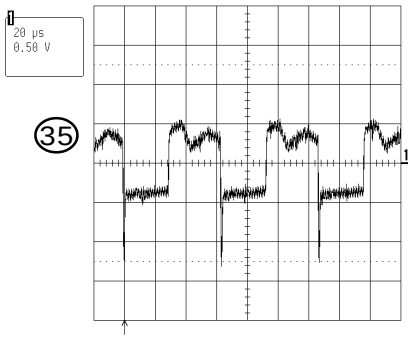
WAVEFORMS



26

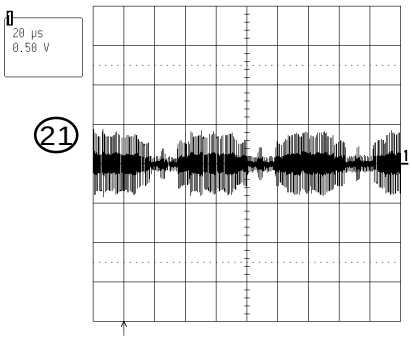


30

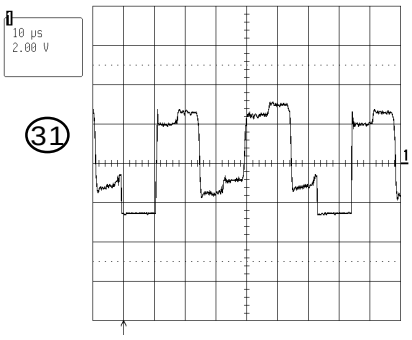


35

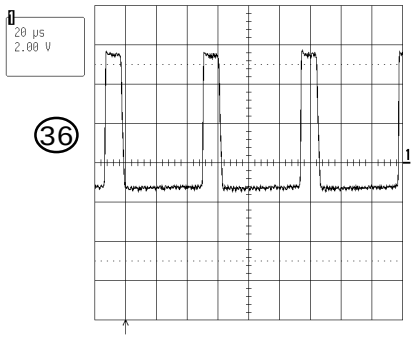
POWER



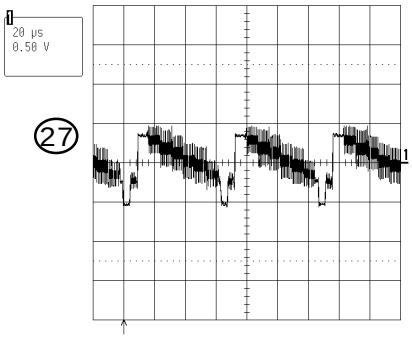
21



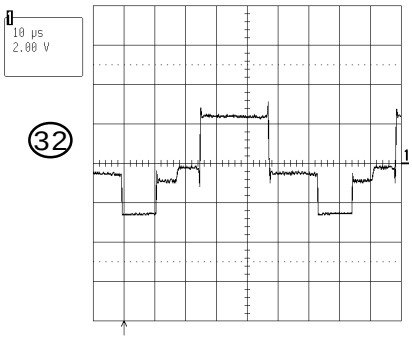
31



36

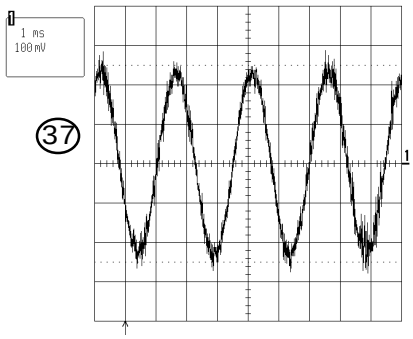


27

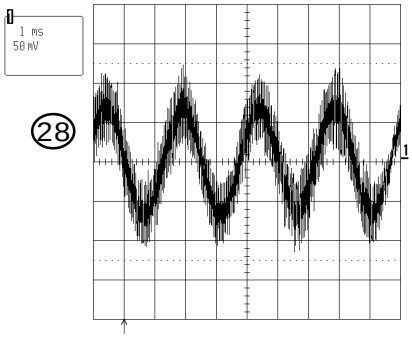


32

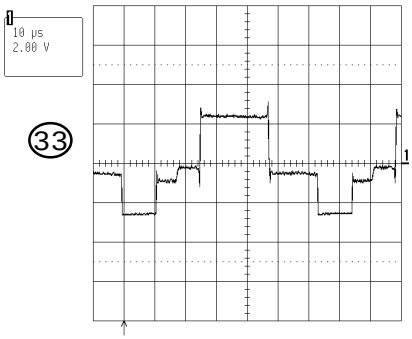
SOUND AMP



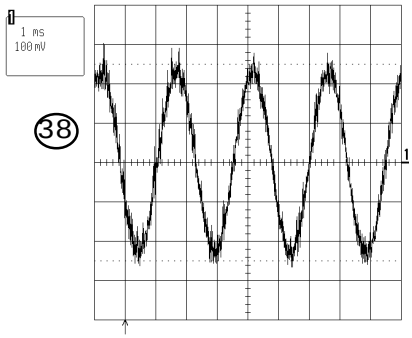
37



28

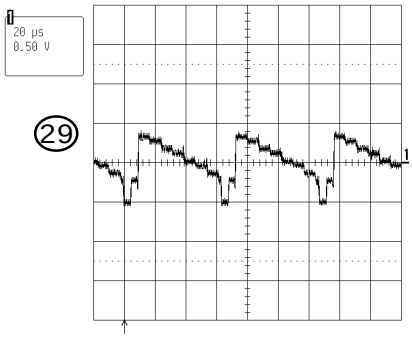


33

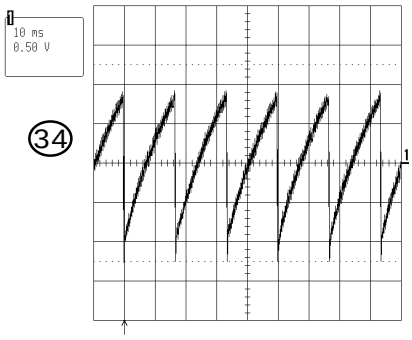


38

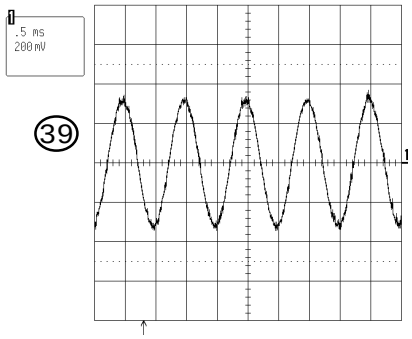
IN/OUT



29



34



39

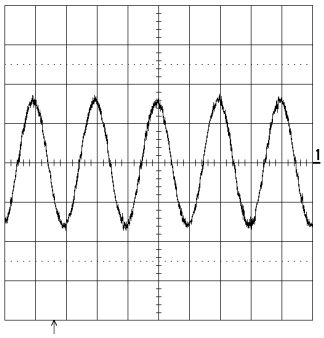
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

STEREO

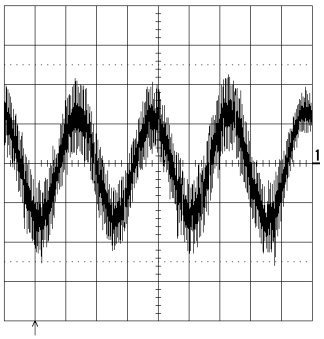
.5 ms
200 mV

(40)



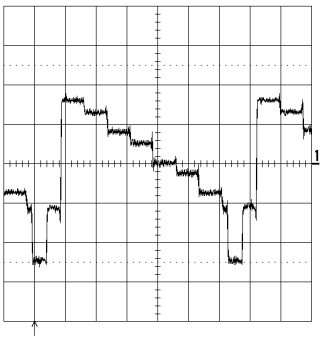
1 ms
50 mV

(46)



10 µs
200 mV

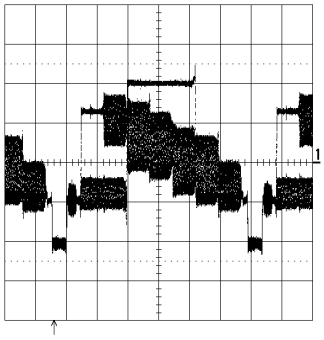
(51)



TV POWER

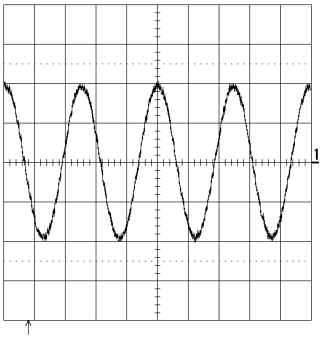
10 µs
0.50 V

(41)



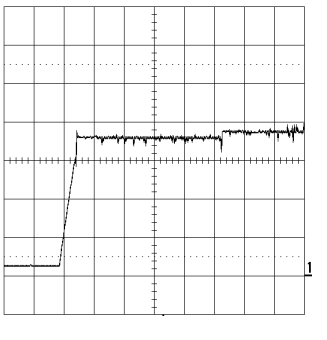
1 ms
200 mV

(47)



1 s
5.0 V

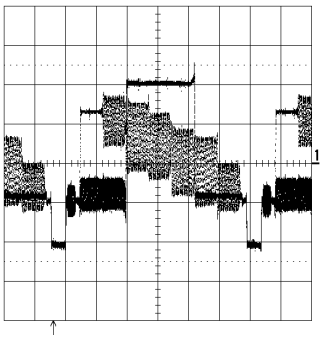
(61)



AV SW

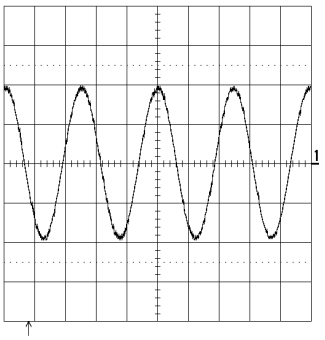
10 µs
0.50 V

(43)



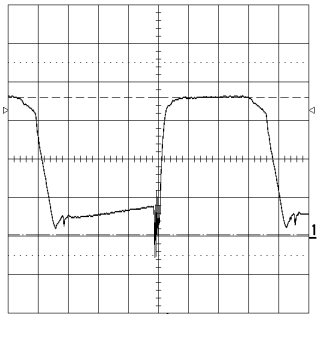
1 ms
200 mV

(48)



2 µs
1.00 V
3.56 V

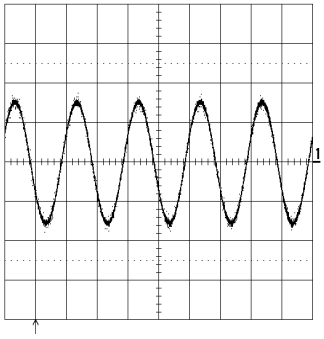
(62)



COMB FILTER

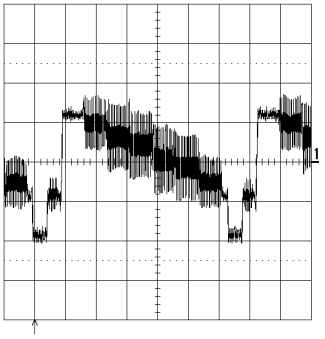
.5 ms
200 mV

(44)



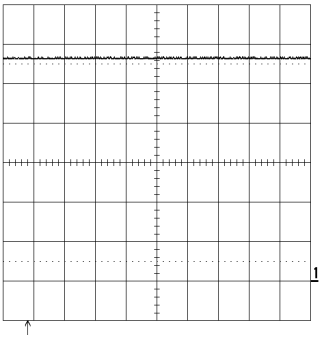
10 µs
200 mV

(49)



1 ms
20.0 V

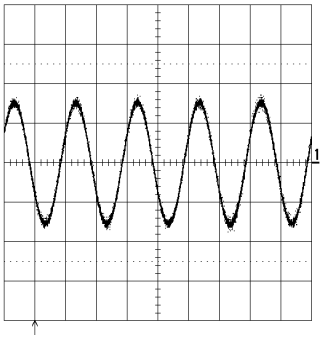
(63)



DEFLECTION

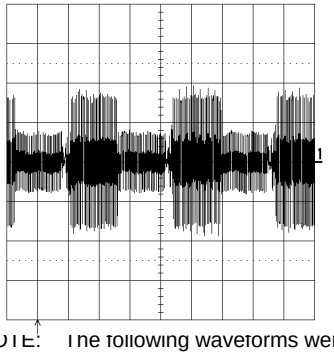
.5 ms
200 mV

(45)



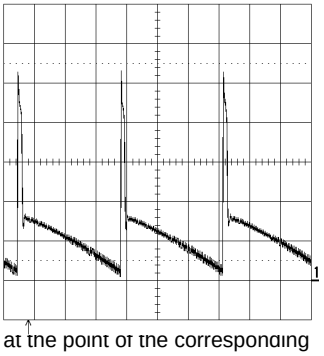
5 ms
200 mV

(50)



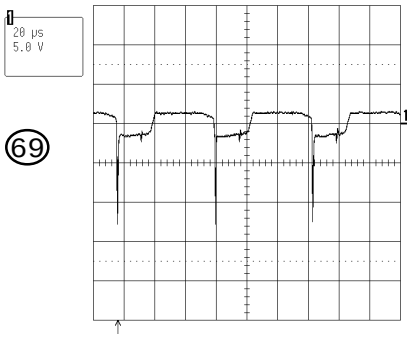
5 ms
10.0 V

(68)



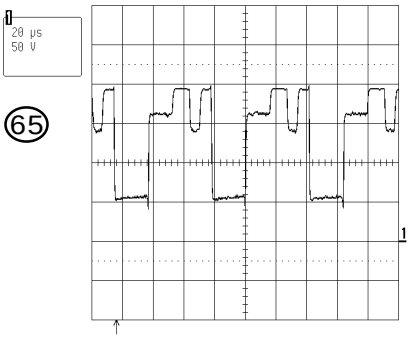
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

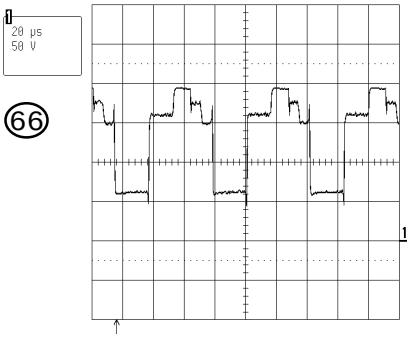


69

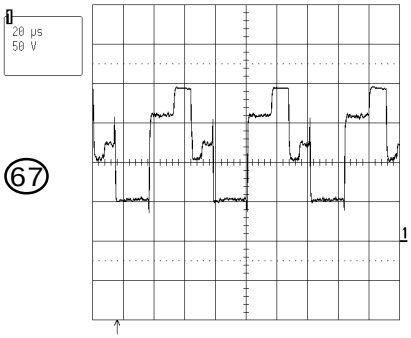
CRT



65



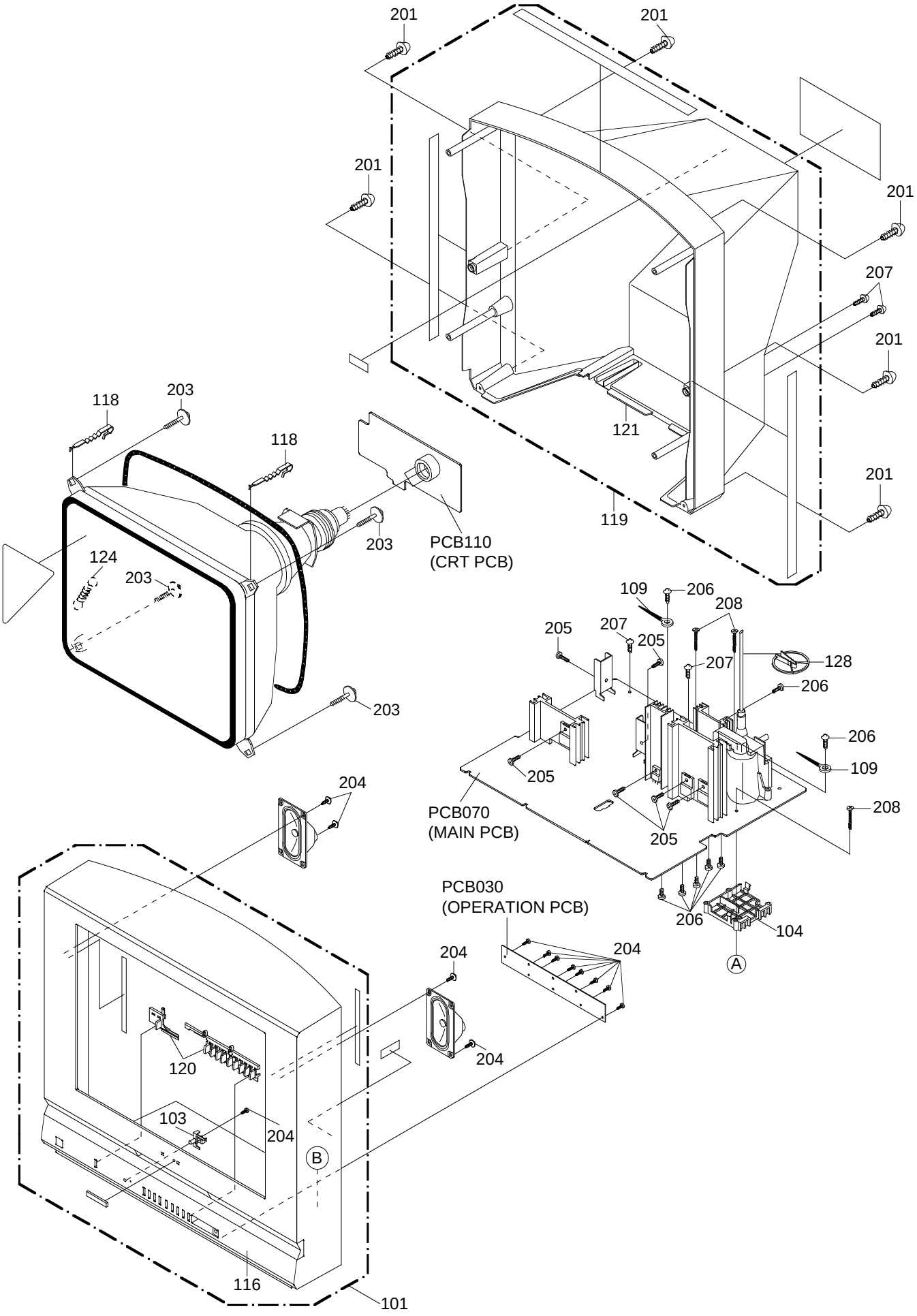
66



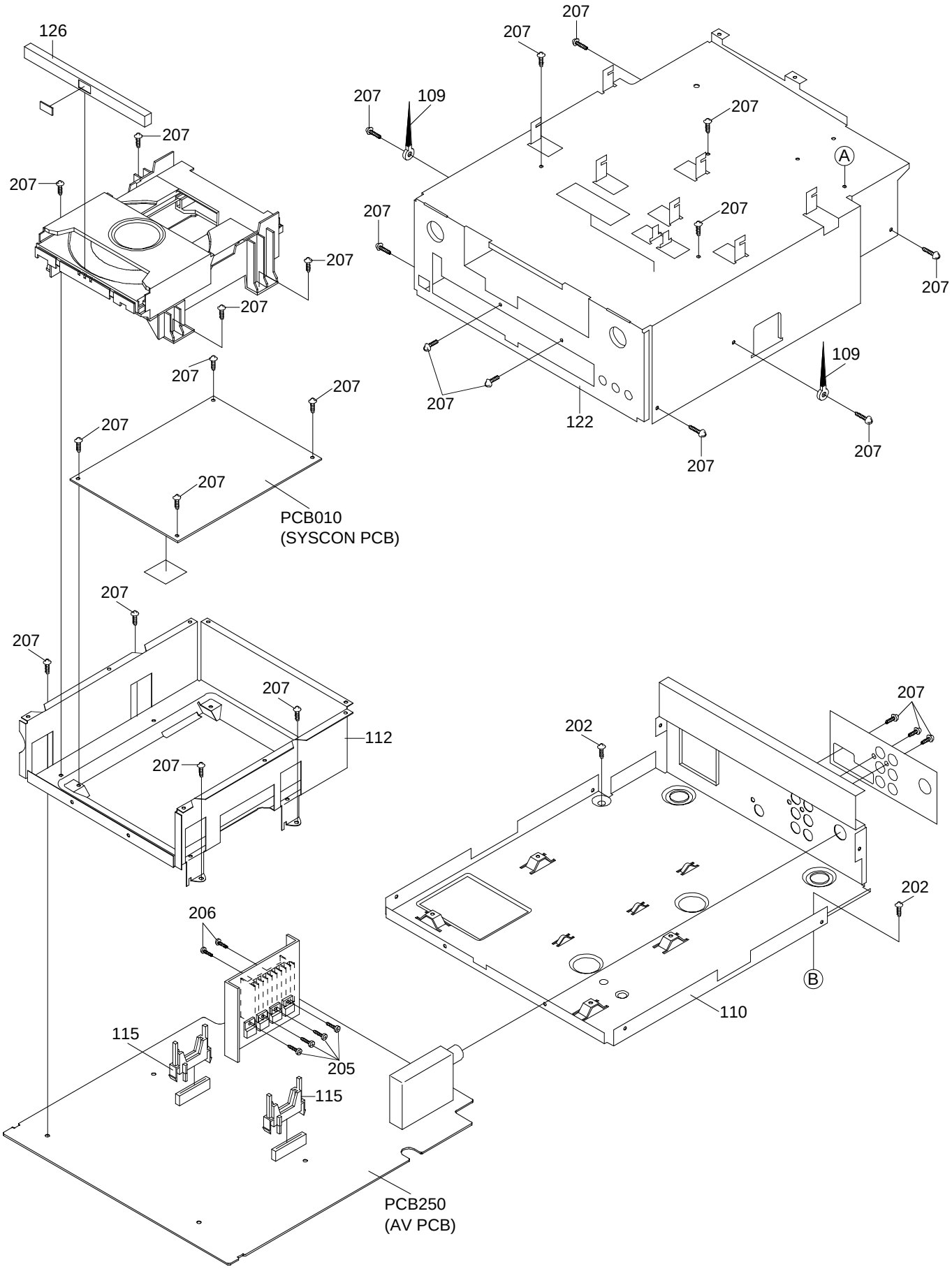
67

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	BZ310401	A58706Z720	CABINET,FRONT ASSY	
103	BZ710396	713WPA0147	GLASS,LED	
104	BZ710459	761WPA0223	HOLDER,FBT	
109	BZ710039	8995034000	CORD CLIP UL CO.	
110	BZ710420	702WSAA026	PLATE,BOTTOM	
112	BZ710398	761WSA0079	ANGLE,DECK	
115	BZ710401	769WPA0018	GUIDE,CONNECTOR(FFC)	
116	BZ710714	701WPJ1124	CABINET,FRONT	
118	BZ710259	762WPA0011	HOLDER,CRT WIRE	
119	BZ310402	A58706Z740	CABINET,BACK ASSY	
120	BZ710404	735WPB0124	BUTTON,FRAME	
121	BZ710422	702WPA0823	CABINET,BACK	
122	BZ710406	702WSA0075	SHIELD,TOP	
124	BZ710258	741WUA0001	SPRING,EARTH	
126	BZ710407	712WPB0075	PLATE,TRAY-FRONT	
128	BZ710260	899HV3T000	HOLDER,ANODE WIRE	
201	BZ710035	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
202	BZ710320	8117540804	SCREW,TAPPING(B0) TRUSS	4x8
203	BZ710275	8121J50B54	SCREW,TAPPING(B0) GW20	5x28
204	BZ710031	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
205	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
206	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
207	BZ710408	8109630604	SCREW,TAP TITE(B) BRAZIER	3x6
208	BZ710409	8107630B04	SCREW,TAP TITE(S) BRAZIER	3x20
---	BZ710410	792WHA0317	PACKAGE,TOP	
---	BZ710411	792WHA0318	PACKAGE,BOTTOM	
---	BZ710715	793WCD1417	GIFT BOX	
---	BZ614256	J5870101	INSTRUCTION BOOK	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description	
			RESISTORS		
⚠R402	BZ210165	R3X18AR56J	R,METAL OXIDE	0.56 OHM 2W	
⚠R410	BZ210166	R002T4562J	RC	5.6K OHM 1/4W	
⚠R418	BZ210053	R002T22R2J	RC	2.2 OHM 1/2W	
⚠R439	BZ210151	R4X5T4273F	R,METAL	27K OHM 1/4W	
⚠R441	BZ210013	R4X5T4104F	R,METAL	100K OHM 1/4W	
⚠R442	BZ210016	R4X5T4822F	R,METAL	8.2K OHM 1/4W	
⚠R443	BZ210167	R4X5T4102F	R,METAL	1K OHM 1/4W	
⚠R444	BZ210152	R4X5T4103F	R,METAL	10K OHM 1/4W	
⚠R447	BZ210021	R65582680J	R,FUSE	68 OHM 1/2W	
⚠R448	BZ210153	R3X181102J	R,METAL OXIDE	1K OHM 1W	
⚠R449	BZ210168	R5X2CE222J	R,CEMENT	2.2K OHM 7W	or
	BZ210266	R5W1CE222J	R,CEMENT	2.2K OHM 7W	
⚠R450	BZ210169	R6358A4R7J	R,FUSE	4.7 OHM 2W	
R461	BZ210170	R3X18A5R6J	R,METAL OXIDE	5.6 OHM 2W	
⚠R500	BZ210001	R21202275K	R,SOLID	2.7M OHM 1/2W	
⚠R501	BZ210031	R5X2CE1R2J	R,CEMENT	1.2 OHM 7W	
⚠R505	BZ210171	R3X28B333J	R,METAL OXIDE	33K OHM 3W	
⚠R509	BZ210172	R65584010J	R,FUSE	1 OHM 1/4W	
⚠R529	BZ210084	R4X5T4272F	R,METAL	2.7K OHM 1/4W	or
	BZ210034	R412T4272F	R,METAL	2.7K OHM 1/4W	
⚠R542	BZ210002	R33681R15J	R,METAL	0.15OHM 1W	
⚠R543	BZ210086	R635U4681J	R,FUSE	680 OHM 1/4W	
⚠R802	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W	
⚠R805	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W	
⚠R810	BZ210050	R3X18A123J	R,METAL OXIDE	12K OHM 2W	
			CAPACITORS		
C313	BZ110078	E02L03102M	CE	1000 UF 25V	
⚠C407	BZ110101	E5EZF3222M	CE	2200 UF 25V	
⚠C421	BZ110014	E5EZ04102M	CE	1000 UF 35V	
C423	BZ210173	P4J7F3474J	CMPP	0.47 UF 250V PMS	
⚠C424	BZ110172	C03L0R7U2K	CC	680 PF 2KV R	
⚠C426	BZ210174	P4N8FJ472H	CMPP	0.0047UF 1.25KV	
⚠C427	BZ110137	P4N8FJ822H	CMPP	0.0082UF 1.25KV	
⚠C428	BZ210175	P3N1F5473J	CPP	0.047 UF 630V	
⚠C431	BZ110103	E02LTD100M	CE	10 UF 250V	
⚠C433	BZ110020	E5EZT8220M	CE	22 UF 100V	
C442	BZ110057	E53FF56R8K	CE	6.8 UF 50V NP	
C450	BZ110182	C03L0R713K	CC	0.001 UF 2KV R	
⚠C502	BZ110009	C13HB07H3K	CC	0.0022UF 2KV B	
⚠C503	BZ110009	C13HB07H3K	CC	0.0022UF 2KV B	
⚠C504	BZ110039	E02LT1102M	CE	1000 UF 10V	
⚠C505	BZ110138	P2472B224M	CMP	0.22UF 275V PHE840	
⚠C506	BZ110138	P2472B224M	CMP	0.22UF 275V PHE840	
⚠C507	BZ110062	E51SFC821M	CE	820 UF 200V	
⚠C510	BZ110063	E5EZT5470M	CE	47 UF 50V	
C514	BZ110191	C03L0R7E3K	CC	0.0015UF 2KV R	
C517	BZ110191	C03L0R7E3K	CC	0.0015UF 2KV R	
C518	BZ110172	C03L0R7U2K	CC	680 PF 2KV R	
⚠C520	BZ110135	E02L02222M	CE	2200 UF 16V	
⚠C521	BZ110130	E62NFC221M	CE	220 UF 200V	
⚠C523	BZ210176	E02LF3222M	CE	2200 UF 25V	
⚠C524	BZ210177	E02LU2470M	CE	47 UF 16V	
C526	BZ110249	E52H02100M	CE	10 UF 16V	or
	BZ110096	E50HU2100M	CE	10 UF 16V	
⚠C529	BZ110082	C034F0JL3M	CC	0.0033UF 125V MX	
⚠C531	BZ210178	E62FT2471M	CE	470 UF 16V	
⚠C535	BZ110023	E62DFB470M	CE	47 UF 160V	
⚠C538	BZ210179	E5EZTB4R7M	CE	4.7 UF 160V	
C819	BZ110141	C0HHB07H3K	CC	0.0022UF 2KV B	or
	BZ110184	C0PWB07H3K	CC	0.0022UF 2KV B	or
	BZ110193	C034BN7H3K	CC	0.0022UF 2KV BN	
C7003	BZ110155	E02L02471M	CE	470 UF 16V	
C7017	BZ110155	E02L02471M	CE	470 UF 16V	
			DIODES		
D101	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D104	BZ410020	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77	
D150	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D151	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D152	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D155	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D159	BZ410081	D23TSB0400	DIODE SILICON	SB040-G3	
D202	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77	
D401	BZ410009	D28T11E1N1	DIODE,SILICON	11E1N-TA1B2	
D402	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1	
D405	BZ410082	D28X10ELS6	DIODE,RECTIFIER	10ELS6-TA2B5	
⚠D407	BZ410051	DCBFMV3FU0	DIODE	FMV-3FULF027-102	
⚠D408	BZ410083	D97U02701B	DIODE,ZENER	MTZJ27B T-77	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			DIODES	
⚠D409	BZ410084	D97U01101B	DIODE,ZENER	MTZJ11B T-77
D410	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D411	BZ410014	D2LTPG06J0	DIODE,SILICON	RMPG06J-G3
⚠D412	BZ410063	D2WTAU02A0	DIODE,SILICON	AU02A-EIC
⚠D413	BZ410014	D2LTPG06J0	DIODE,SILICON	RMPG06J-G3
⚠D501	BZ410044	D4LZBL06L0	DIODE	GBL06L-6177
⚠D503	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
⚠D504	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D505	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D506	BZ410014	D2LTPG06J0	DIODE,SILICON	RMPG06J-G3
D507	BZ410077	D2WXSB1400	DIODE,SCHOTTKY	SB140-EIC
⚠D508	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D509	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D510	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
⚠D511	BZ410011	D28TELS2N2	DIODE,RECTIFIER	10ELS2N-TA1B2
⚠D512	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D514	BZ410081	D23TSB0400	DIODE,SILICON	SB040-G3
D515	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D516	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D517	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D518	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D519	BZ410011	D28TELS2N2	DIODE,RECTIFER	10ELS2N-TA1B2
D521	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D527	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D528	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D533	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D534	BZ410061	D97U01001B	DIODE,ZENER	MTZJ10B T-77
⚠D536	BZ410085	D2WXN40050	DIODE SILICON	1N4005-EIC
D603	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D604	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D605	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D606	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D607	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D608	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
D612	BZ410059	D2WT11ES10	DIODE,SILICON	11ES1-EIC
D613	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D614	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D615	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D792	BZ410087	0021E2Q140	LED	LTL-1CHEE-002A
D805	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D806	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D807	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D1002	BZ410086	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D1003	BZ410086	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D1004	BZ410086	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D7005	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7006	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7010	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7011	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D7013	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D8501	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
D8502	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
D8505	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
D8506	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
D8507	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
D8508	BZ410086	DD7R0S3550	DIODE,SILICON	1SS355 TE-17
			ICS	
IC101	BZ611119	I55D06063C	IC	OEC6063C
IC102	BZ611061	I9UJ0T600C	IC	PST600C
⚠IC152	BZ611015	I1KA97805A	IC	KIA7805API
⚠IC153	BZ611033	I1KA97809A	IC	KIA7809API
⚠IC154	BZ611015	I1KA97805A	IC	KIA7805API
IC199	BZ310399	A58706Z255	IC	S-24C08ADPA-01
IC301	BZ611063	I06F062420	IC	M62420FP
⚠IC302	BZ611035	I0FSP75220	IC	AN7522
⚠IC401	BZ611053	I01TD55220	IC	AN5522
⚠IC501	BZ611036	I2BT06624G	IC	STR-G6624
⚠IC503	BZ611015	I1KA97805A	IC	KIA7805API
IC601	BZ611064	I05DC12530	IC	TB1253N
IC602	BZ611078	I03F071510	IC	LA7151M-TLM
IC701	BZ611066	I0UD013110	IC	MM1311AD
IC751	BZ611067	I05DE90A45	IC	TC90A45P
IC902	BZ611068	I01FF58290	IC	AN5829S
IC1001	BZ611069	ICQF067030	IC	ZR36703
IC1006	BZ611070	I57F04C01W	IC	BR24C01AF-WE2
IC4001	BZ611120	ICQF067101	IC	ZR36710
IC4002	BZ611072	ICLJ0610DB	IC	HY57V161610DTC-8

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description		
			ICS		
IC4004	BZ611073	I5CF040520	IC	SN74LV4052APW	
IC7001	BZ611074	I0QF045800	IC	NJM4580M	
IC7002	BZ611075	I5CF040530	IC	CD4053BNSR	
IC8501	BZ611076	I5VF0865A0	IC	BT865AKRF	
IC8503	BZ611077	I17F017160	IC	PCM1716E	
IC8504	BZ611073	I5CF040520	IC	SN74LV4052APW	
			TRANSISTORS		
Q103	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q105	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q109	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
⚠Q150	BZ510032	TD3T012460	TRANSISTOR,SILICON	2SD1246(S,T)-AA	
Q151	BZ510060	TB3T011310	TRANSISTOR,SILICON	2SB1131(S,T)-AE	
Q152	BZ510068	TNAAJ05003	COMPOUND TRANSISTOR	KRC111SRTK	
Q153	BZ510060	TB3T011310	TRANSISTOR,SILICON	2SB1131(S,T)-AE	
⚠Q154	BZ510076	TB30011430	TRANSISTOR,SILICON	2SB1143(S,T,U)	
Q155	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q156	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q157	BZ510060	TB3T011310	TRANSISTOR,SILICON	2SB1131(S,T)-AE	
Q158	BZ510077	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT	
Q159	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q160	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q202	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q203	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q204	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q205	BZ510061	T83A028140	TRANSISTOR,SILICON	2SC2814(F3,F4)-T	
Q301	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q303	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q304	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
⚠Q401	BZ510004	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA	
Q402	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
Q403	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
Q404	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)	
⚠Q405	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC	
⚠Q406	BZ510040	TDUU024990	TRANSISTOR,SILICON	2SD2499(LB0EC1)	
Q407	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)	
Q408	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)	
Q409	BZ510041	TD30016670	TRANSISTOR,SILICON	2SD1667(R,S)	
Q410	BZ510078	TNATJ03003	COMPOUND TRANSISTOR	KRC111MAT	
⚠Q501	BZ510077	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT	
Q502	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
⚠Q503	BZ510015	TCWQ4160E0	TRANSISTOR,SILICON	2SC4160-OEC-YAC1	
Q504	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
⚠Q505	BZ410088	0002E00610	PHOTO COUPLER	LTV-817M-VB	
Q507	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)	
Q508	BZ510032	TD3T012460	TRANSISTOR,SILICON	2SD1246(S,T)-AA	
⚠Q509	BZ510082	TA5T010130	TRANSISTOR,SILICON	2SA1013 (TPE6)	
⚠Q510	BZ510011	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA	
⚠Q511	BZ510076	TB30011430	TRANSISTOR,SILICON	2SB1143(S,T,U)	
Q603	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q604	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q608	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q702	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q753	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q754	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
⚠Q804	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)	or
	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC	
⚠Q805	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)	or
	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC	
⚠Q806	BZ510091	TCA0042170	TRANSISTOR,SILICON	KTC4217(O,Y)	or
	BZ510027	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC	
⚠Q807	BZ510080	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP TP	
⚠Q808	BZ510080	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP TP	
⚠Q809	BZ510080	TCYT1740S0	TRANSISTOR,SILICON	2SC1740SP TP	
Q7001	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7002	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q7003	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7004	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7005	BZ510025	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146	
Q7006	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7007	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7008	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7009	BZ510067	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK	
Q7010	BZ510081	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146	
Q7011	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7012	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7013	BZ510067	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK	
Q7014	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description		
		TRANSISTORS			
Q7015	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)	
Q7016	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q7017	BZ510045	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146	
Q751B	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q752A	BZ510079	TNATX05001	COMPOUND TRANSISTOR	KRC114MAT	
Q752B	BZ510001	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S	
Q8004	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q8005	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
Q8501	BZ510002	T8YJ2412K0	TRANSISTOR,SILICON	2SC2412KT146 R,S	
		COILS &TRANSFORMERS			
L001	BZ310041	02167F101J	COIL	100 UH	
L151	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
L201	BZ310067	021LA6180K	COIL	18 UH	
L202	BZ310041	02167F101J	COIL	100 UH	
L203	BZ310041	02167F101J	COIL	100 UH	
L204	BZ310049	021LA6R22M	COIL	0.22 UH	
L207	BZ310012	021LA6R56M	COIL	0.56 UH	
L302	BZ310041	02167F101J	COIL	100 UH	
L303	BZ310041	02167F101J	COIL	100 UH	
L401	BZ310004	021679472K	COIL	4.7 MH	
L402	BZ310063	022100027A	COIL,LINEARITY	ELH5L4113	
L403	BZ310125	02D1000001	COIL	ELC16B501EN	
⚠L501	BZ310126	029X000098	COIL,LINE FILTER	SS28H-20075	
L502	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
⚠L503	BZ310066	028R200024	COIL,DEGAUSS	8R200024	
L601	BZ310041	02167F101J	COIL	100 UH	
L602	BZ310041	02167F101J	COIL	100 UH	
L603	BZ310041	02167F101J	COIL	100 UH	
L606	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
L701	BZ310041	02167F101J	COIL	100 UH	
L751	BZ310041	02167F101J	COIL	100 UH	
L752	BZ310043	021LA6150K	COIL	15 UH	
L753	BZ310043	021LA6150K	COIL	15 UH	
L755	BZ310041	02167F101J	COIL	100 UH	
L756	BZ310124	02AHA896A1	CORE,FERRITE	W5T18.4X10X9.6	
L758	BZ310041	02167F101J	COIL	100 UH	
L801	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
L802	BZ310069	02167D151K	COIL	150 UH	
L803	BZ310069	02167D151K	COIL	150 UH	
L804	BZ310069	02167D151K	COIL	150 UH	
L810	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	or
	BZ310132	02AXB9A971	CORE,FERRITE	ESD-R-30SD	
L811	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
L902	BZ310041	02167F101J	COIL	100 UH	
L7001	BZ310133	02167D472K	COIL	4.7 MH	
L7002	BZ310042	021LA6101K	COIL	100 UH	
L7003	BZ310041	02167F101J	COIL	100 UH	
L7004	BZ310041	02167F101J	COIL	100 UH	
L8501	BZ310127	02167B1R8K	COIL	1.8 UH	
L8503	BZ310127	02167B1R8K	COIL	1.8 UH	
L8504	BZ310127	02167B1R8K	COIL	1.8 UH	
T401	BZ310072	045013001J	TRANS,HORIZONTAL DRIVE	5013001	
⚠T501	BZ310128	0481420624	TRANSFORMER,SWITCHING	81420624	
		JACKS			
⚠J351	BZ614002	060G131014	RCA JACK	HTJ-035-28A	
J701	BZ614114	0602431013	RCA JACK	JPJ1187-010010	
⚠J801	BZ614115	066C130017	SOCKET,CATHODE RAY TUBE	CVT3275-5101	
J7001	BZ614225	060Q401038	RCA JACK	YKC21-3895	
J7002	BZ614204	060Q411015	RCA JACK	AV3-19D-1	
J7003	BZ614203	060Q431018	RCA JACK	AV3-19DS-1	
		SWITCHES			
SW751	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW791	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW792	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW793	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW794	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW795	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW796	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW797	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW798	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
SW799	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R	
		VARIABLE RESISTORS			
VR502	BZ210109	V1163Q2BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ2	
		P.C.BOARD ASSEMBLIES			
PCB010	BZ610180	A58701Q010	PCB ASS'Y	VMA215A	
PCB030	BZ610181	A58701Q030	PCB ASS'Y	TEXA33C	
PCB070	BZ610182	A58701Q070	PCB ASS'Y	TMA502B	

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
		P.C.BOARD ASSEMBLIES		
PCB110	BZ610183	A58701Q110	PCB ASS'Y	TCA359B
PCB250	BZ310400	A58706Z250	PCB ASS'Y	TMA503A
		MISCELLANEOUS		
B301	BZ310130	024HT03564	CORE,BEADS	W4BRH3.5X6X1
B502	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B504	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B505	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B1001	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B4001	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B4002	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B7001	BZ310130	024HT03564	CORE,BEADS	W4BRH3.5X6X1
B7003	BZ310130	024HT03564	CORE,BEADS	W4BRH3.5X6X1
B7004	BZ310130	024HT03564	CORE,BEADS	W4BRH3.5X6X1
B8501	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B8502	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B8503	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
B8505	BZ310130	024XC36002	CORE,BEADS	N2012ZP600T25
BL001	BZ310014	023C00022A	COIL,BALUN	HPN-01
CD001	BZ614449	06CU012601	CORD,JUMPER	CU12601
CD002	BZ614449	06CU012601	CORD,JUMPER	CU12601
CD355	BZ614226	06CU123802	CORD,CONNECTOR	CU123802
CD356	BZ614226	06CU123802	CORD,CONNECTOR	CU123802
CD401	BZ614227	06CU013201	CORD,CONNECTOR	CU013201
CD402	BZ614228	06CU010901	CORD,CONNECTOR	CU010901
CD403	BZ614229	06CU013501	CORD,CONNECTOR	CU013501
⚠CD501	BZ614230	1207414907	CORD,AC BUSH	7414907
CD502	BZ614100	06CH01408A	CORD,EIS CONNECTOR	CH01408A
CD702	BZ614206	06CU2B2801	CORD,CONNECTOR	CU2B2801
CD757	BZ614231	06CU292501	CORD,CONNECTOR	CU292501
CD801	BZ614232	06CP83035A	CORD,CONNECTOR	CP83035A
CD803	BZ614233	122Y054501	CORD,JUMPER	2Y054501
CD810	BZ614450	WJL6836038	FLAT CABLE AWM2468 A	WG26 11C GRAY 360MM
CD811	BZ614235	06CU264201	CORD,CONNECTOR	CU264201
CD820	BZ614451	WKL6036038	FLAT CABLE AWM2468 A	WG26 12C BLACK 360MM
CD850	BZ614452	WCL6870038	FLAT CABLE AWM2468 A	WG26 5C GRAY 700MM
CF201	BZ613016	1011T4R517	FILTER,CERAMIC	EFCT4R5MW5
CF202	BZ613015	1011T4R504	FILTER,CERAMIC	EFCT4R5YS5A
CF203	BZ613030	1022045R72	FILTER,SAW	SAFGP45M7VFYZR0B
CF204	BZ613018	1012T04702	FILTER,CERAMIC TRAP	MKT47.3MC110P-TF
CP101	BZ614238	0697260650	CONNECTOR PCB SIDE	TKC-M06X-A1
CP102	BZ614239	069S290639	CONNECTOR PCB SIDE	A2001WR2-9P
CP303	BZ614214	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP401	BZ614240	069X460029	CONNECTOR PCB SIDE	B06B-DVS
CP403	BZ614016	069W01001A	CONNECTOR PCB SIDE	003P-2100
⚠CP502	BZ614018	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP506	BZ614016	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP507	BZ614016	069W01001A	CONNECTOR PCB SIDE	003P-2100
CP801	BZ614241	069W330018	CONNECTOR PCB SIDE	TS-80P-03-V1
CP807	BZ614058	069W010010	CONNECTOR PCB SIDE	005P-2100
CP811	BZ614242	069S260629	CONNECTOR PCB SIDE	A2001WV2-6P
CD4001	BZ614243	122S0Q0901	CORD,JUMPER	2S0Q0901
CD4002	BZ614243	122S0G0901	CORD,JUMPER	2S0G0901
CD8001	BZ614244	122S0I0101	CORD,JUMPER	2S0I0101
CD8002	BZ614244	122S0I0101	CORD,JUMPER	2S0I0101
CP4001	BZ614245	069JVQ0180	CONNECTOR PCB SIDE	IMSA-9615S-26C-P
CP4002	BZ614245	069JVG0180	CONNECTOR PCB SIDE	IMSA-9615S-16C-P
CP8001	BZ614246	0694290139	CONNECTOR PCB SIDE	173979-9
CP8002	BZ614247	069J7I0029	CONNECTOR PCB SIDE	IMSA-9604S-18Z14
CP8003	BZ614247	069J7I0029	CONNECTOR PCB SIDE	IMSA-9604S-18Z14
CP8004	BZ614248	067R011019	WIRE HOLDER	51048-1110
CP8005	BZ614249	067R012019	WIRE HOLDER	51048-1210
CP8006	BZ614215	067R005019	WIRE HOLDER	51048-0510
CP803A	BZ614006	067R105019	WIRE HOLDER	51052-0500
CP803B	BZ614006	067R105019	WIRE HOLDER	51052-0500
CP810B	BZ614250	069R2B0589	CONNECTOR PCB SIDE	52147-1110
CP820B	BZ614251	069R2C0589	CONNECTOR PCB SIDE	52147-1210
CP8501	BZ614247	069J7I0029	CONNECTOR PCB SIDE	IMSA-9604S-18Z14
CP8502	BZ614247	069J7I0029	CONNECTOR PCB SIDE	IMSA-9604S-18Z14
CP850B	BZ614212	069R250589	CONNECTOR PCB SIDE	52147-0510
⚠DK4001	BZ310388	169G00011A	DECK CD	DVD-KIT510SE-A
EL001	BZ614043	124116281A	EYE LET	XRY16X28BD
EL002	BZ614044	124120301A	EYE LET	XRY20X30BD
⚠F501	BZ614125	081PC6R304	FUSE	51MS063LCC
⚠F502	BZ614126	081PC2R504	FUSE	51MS025LCC
⚠FB401	BZ310131	043221017R	TRANSFORMER,FLYBACK	3221017R
FH501	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description	
		MISCELLANEOUS			
FH503	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC	
FH504	BZ614005	06710T0006	HOLDER,FUSE	EYF-52BC	
⚠ICP501	BZ614252	0835C04003	MICRO FUSE	20N_4000FS	
⚠ICP502	BZ614252	0835C04003	MICRO FUSE	20N_4000FS	
⚠ICP504	BZ614252	0835C04003	MICRO FUSE	20N_4000FS	
OS753	BZ614127	077Q000019	REMOTE RECEIVER	PIC-28143TC5	
⚠RY501	BZ612009	0560V20115	RELAY	ALKS321	
⚠SP351	BZ614381	070C546004	SPEAKER	SG04H02BRA	or
	BZ614253	070W546003	SPEAKER	MSF-18D5SB05-02	
⚠SP352	BZ614381	070C546004	SPEAKER	SG04H02BRA	or
	BZ614253	070W546003	SPEAKER	MSF-18D5SB05-02	
⚠TH501	BZ410079	DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A	
TM101	BZ614429	076D0EF010	TRANSMITTER	TOT201N09080	or
	BZ614254	076N0EF010	TRANSMITTER	DC-FL20S	
⚠TU001	BZ610125	0145K00055	TUNER,VHF-UHF	TECC1040PG32D	
⚠V801	BZ614453	098W210433	CRT W/DY	A51LVV196X10(O)	
X101	BZ613019	1002T01606	CERAMIC OSCILLATOR	CSTLS16M0X53-A0	
X601	BZ613004	100CT3R505	CRYSTAL	HC-49/C	
X1001	BZ613020	100CT01210	CRYSTAL	HC-49/U	
X4001	BZ613021	100DA02706	CRYSTAL	AT-49	

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

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